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MONTANA OUTDOORS

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the cover

Cross-country skiing, snowshoeing, winter camping and other nonmechanized uses of Montana's winter wilderness are increasing every year. Another Montana Outdoors Recreation Guide on page 15 explains why and offers specifics about enjoyment of the backcountry all year—not just in warm months. Front cover photo by Jerry Manley. The holidays are rapidly approaching, and why not do something different this year? Ring in the holiday season by making your own wreath from natural materials gathered on a short excursion to nearby woods. Turn to page 8 for details. Back cover photo by Tom Warren

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ASHTON'S

a livable environment for WILDLIFE is a quality environment for MAN

DUCKS AND DATA

Once again, the Department of Fish and Game and Montana sportsmen must bear the burden of what appears to be faulty decision making at the federal level. The latest episode in a continuing controversy with the U.S. Fish and Wildlife Service comes disguised as the "Flyway Management System"—or more specifically, the federal regulations which the states must conform to for Central Flyway waterfowl hunting this year.

Based on highly questionable information, Montana hunters face a more restrictive waterfowl season in the Central Flyway this fall. Not only is the duck season shortened by 11 days, but the bag limit is much more restricted, particularly for drake mallards, pintails, green-winged teal and ring-necked ducks. The feds hope to return more mallards from the High Plains portions of the Central Flyway to the breeding grounds next spring. This will supposedly contribute more birds to the continental mallard population—the old "stockpiling" routine which presumes that birds "protected" from hunting this year will mean that many more next year. This logic is faulty enough, but the data on which it is based is worse.

For example, consider the content of the Fish and Wildlife Service report for 1974, "Waterfowl Production Survey for Montana." This report provides the baseline information used in setting the season. It contained many—perhaps too many—"weasel words" which have no place in a professional publication, and certainly not in a document designed to provide the framework for management of a flyway waterfowl population.

Further, the report states, "The average brood size of 5.167 is *just slightly below* last year's 5.22." And the publication concludes, "the production in Montana is *down* . . .," "water is *down*," and "the forecast is *below average*" (emphasis added).

Region 7 (north central Montana) game management personnel disagree. They say eastern Montana is *not* drier than normal, as alluded to in the report. Instead, they contend, the exact opposite is true. And in regard to the sample size (60-100 broods) used in average brood size determinations in the report, the figures are nothing more than a guess and probably not statistically significant because of the small sample size.

This latest effort by the Fish and Wildlife Service to use qualitative information to support their regulations can only be described as "highly questionable." The real losers in this affair, though, are Montana sportsmen. They must pay the price. Hopefully, sportsmen will receive *all* the facts in the future, so they can realize how their money and their resource is being spent—or maybe "expended" would be a better word.

Wes Woodgerd

Wes Woodgerd, Director
Department of Fish and Game

FOREST FIRES and WILDLIFE

–a hot subject– by Bill Schneider

WIDE-EYED, I WATCHED the blackish smoke bellow from the crowning forest fire. "Wildfire," I thought as the blaze rushed down the steep slopes of Huckleberry Mountain, jumped two major roads and leveled the main fire camp. On another front, the holocaust vaulted the North Fork of the Flathead River (the west border of Glacier National Park) and began blackening the Flathead National Forest.

"What a waste," I thought as I viewed the calamity from the National Park Service (NPS) Huckleberry Mountain lookout. Coincidence brought my fire crew there at approximately the same moment the fire decided to grow by several thousand acres.

At that moment in 1967, I regretted the loss of wildlife caused by uncontrolled wildfire—a tragedy so aptly painted by a flawless American hero, Smokey Bear. Throughout my childhood, Smokey ingrained into my mind (yours too, I bet) that forest fires were very bad for wildlife. Remember the posters? I remember the one with Smokey and all his "friends"—rabbits, "Bambi," a raccoon and all the rest—huddled around. "Remember," the caption read, "Smokey's friends don't play with matches."

But now the burning truth is out. Many professional wildlife managers disagree with Smokey. They insist that most forest fires are indeed *good*, and Smokey may have been slowly starving his "friends."

Just as I envisioned from the lookout, wildfire may be a "waste of wildlife." However, according to some wildlife pros, this "waste" comes from overzealous fire prevention and suppression, not from being "all burnt up"—as Smokey still instructs America.

Throughout the years, wildlifers grew wary of Smokey. They knew his teachings had some cracks. And perhaps the first biologist to open one was Herbert L. Stoddard, a southern ornithologist.

About 1924, some Florida and Georgia estate owners asked Stoddard to find out why bobwhite quail numbers were rapidly declining. After seven years, he published his highly acclaimed book, "The Bobwhite Quail." He stated that the bobwhite was in trouble mostly because fires weren't tolerated in southern forests. When the woods went fireless, Stoddard concluded, the open parks where quail nested and foraged advanced, through plant succession, to tall shrubs and conifers. This left marginal quail habitat at best, he felt. It also put a real crunch on quail hunting, which by then had become almost a ritual on large southern plantations.

As a result of the efforts of such pioneers, thousands of acres of southern forests (private and public) are purposely burnt (or allowed to burn) each year—much to the benefit of the bobwhite and other wildlife.

(This policy was helped along by a closely related discovery. Foresters found that many southern pines—slash, loblolly, longleaf, etc.—often failed to germinate, and thus re-establish the forest, without fire.)

In the West, foresters seemed more reluctant to follow the south's lead—perhaps with good cause. Here, raging forest fires periodically singed the coniferous timberlands—until civilization arrived, that is. Guided by the Forest Service, several state and federal agencies, timber companies, and, of course, Smokey Bear, the public gradually began to resent—and even instantly fear—wildfire. "Hit 'em hard and keep 'em small" was the creed. And the public backed it up all the way.

Millions upon millions of dollars were spent to prevent and control the fire monster. For example, Region One of the FS—Montana, North Dakota, northern Idaho, and small portions of South Dakota and Wyoming—still spends an average of $5.3 million each year.

So effective was Smokey's campaign that it was difficult for the emerging science of fire ecology to surface at all. A few, but ardent, officials labored to replace emphasis on fire control, which they viewed as outmoded, with a new idea: fire *management.*

But it wasn't easy. Smokey, with the help of generous advertising budgets, did his job well—too well, according to many professional foresters and game managers. "Before the Smokey Bear program," Dave Aldrich, wilderness fire planner from the Bitterroot National Forest, recently told the Canadian Forestry Association, "fire prevention publicity was piecemeal at best; but, with a symbol to rally behind, the program became so effective that even the use of prescribed fire was frowned upon in some circles"—to cite just one example.

This "new look" at wildfire was at least partly spurred on by an increasing number of queries from state game managers. Wildlife researchers were finding, to the dismay of some lay people, that fires improved habitat for many wild animals.

Perhaps 1970 brought Smokey's first western challenge. "Contrary to the belief supported by tens of millions of Americans," Ladd S. Gordon, director of the New Mexico Department of Game and Fish, wrote in his agency's magazine, "Smokey Bear is not necessarily synonymous with all that is good in conservation, though we will all readily admit there is much good to be said about his teachings.

"Most game animals prefer an area which has openings interspersed with forested areas, places where there is adequate food supply, but which has nearby escape cover as well," he explained. "Fire, if properly used, can be the quickest and most effective way to provide this desirable habitat condition." He also flatly stated that Smokey Bear has played a major role in "removing favorable game habitat conditions throughout much of the country."

Gordon's alarming conclusion was, "Our game populations can

continued

no longer afford the luxury of almost total protection from fire."

(Oddly, the challenge originated in New Mexico, Smokey's home state. It was here after a May 1950 fire, a black bear cub was found clinging to a charred snag with burnt paws—truly a pitiful sight, according to a child's book on the subject. The local newspaper wanted to name him "Hot Foot Teddy," but instead he became "Smokey" and took up residence in a Washington, D.C. zoo. After 24 years, he still lives there.)

Apparently, New Mexico opened the worm can because other western states followed suit. Idaho was one of the next.

In the Gem State, studies centered on the impact of fire on elk habitat. Thomas A. Leege, a senior game research biologist involved in the Idaho research, often starts his story by dispelling the notion elk were "numerous" in the "good old days." He contends, "Old records tell us that elk were rare when Lewis and Clark traveled through Idaho in 1805-6." And, according to Leege, elk remained scarce until the early 1900s.

Leege and his colleagues from other western states, including Montana, believe the northern Rockies contained mostly solid stands of mature conifers with a notable scarcity of lower succession stages (brush, grass and other smaller plants) during the late 1800s. Simply stated, that meant poor elk range. These researchers credit the fires of 1910, 1919, 1934 and other years for the sharp increase in elk and deer numbers during the early 20th century.

These fires created "favorable habitat conditions" for elk and many other animals. Testifying to this, the Clearwater drainage of northern Idaho—where Lewis and Clark once spent a month without killing a single elk—now supports one of the nation's largest elk herds. Another example was Montana's Bob Marshall Wilderness and surrounding lands where big game numbers mushroomed and provided nationally acclaimed hunting for many years.

After fire, prime elk forage (mostly low-growing, woody plants) springs from blackened hillsides. If the fires are widespread, it's a bonanza for elk, deer, bighorn sheep and other wildlife. This is exactly what happened early this century. Elk herds thrived on the new forage and increased until the mid-1950s. Since then, they've been, with few exceptions, on a downhill skid. And today, western elk ranges are feeling the full impact of Smokey's success.

We've spelled out the critical nature of big game winter range many times in MO. Again, this vital limiting factor comes into play because fire often creates both summer and winter habitat. Unfortunately, plant succession, in turn, often eliminates it, which is exactly what's happening right now in Montana's Bob Marshall Wilderness Area, northern Idaho and all across the West.

Evergreens invade the open parks, or in other cases, the deciduous shrubs grow out of reach. And, in Leege's words, "The downward trend is destined to continue until habitat improvements occur."

Western wildlifers are fighting it, though. Working with the FS, they're purposely burning ("prescribed" burning) prime elk winter ranges. From his Idaho research, Leege believes the ranges should be reburned every 10-15 years and emphasized the need "to get through the initial burns before a backlog of areas needing reburning builds up."

This burning policy has its foes. But comments received by the FS, indicate the public generally favors it.

Montana study on the relationship between wildfires and wildlife has focused on the vast Bob Marshall area. And regional game manger Reuel Janson's findings parallel Idaho's. He warns that game ranges created by fire 35-80 years ago are now lost under a canopy of trees.

Janson cites department records where more deer died of malnutrition between 1935-1955 than were killed by hunters. And, "heavy winter losses of elk also occurred . . . ." The reason? He feels vital big game ranges are disappearing through plant succession, and modern fire control isn't creating replacement habitat.

Like it or not, the FS finds itself in the center of this controversy. For 70 years, this agency portrayed fire as a villain. It created the cartoon bear and made him famous. Now, only Goldilocks' friends dare challenge Smokey's popularity.

A 1968 opinion survey by a Los Angeles firm confirms Smokey's success. Among grade school children, Smokey claimed 40 per cent of the votes as the favorite animal symbol. He shamed his closest rivals—Pinocchio (27 per cent) and the Jolly Green Giant (6 per cent). Surprisingly, the bear's popularity remained high among adults (30 per cent). However, the Playboy bunny wasn't allowed to compete.

From the FS point of view, it's understandably difficult to question Smokey. First, according to Ed Heilman, chief of fire and air management for Region One, the FS is legally obligated to "control" fires. "It's written right into our Organic Act," he said.

Second, "Smokey Bearism" has been sold, almost to a point of no return. This makes it nearly impossible to dramatically change the message. Imagine a slogan saying, "We're Smokey's friends. Please let a few fires go so we can live."

This is not meant to imply that the FS, NPS, the Bureau of Land Management, state agencies and private timber companies aren't giving ground. They are. For example, Philip L. Thornton, deputy chief of the FS, recently told the New York Times, "We've decided to let Mother Nature do her whole thing when it doesn't threaten inhabited private areas. We simply won't go all out to put the fires out."

Also, Smokey's slogans have changed somewhat over the years.

Examine the following utterances: "Our Most Shameful Waste!"—1950; "Remember: There are babes in the woods"; "A true friend of Smokey's leaves matches alone. He won't burn his fingers or the animals' home"; "Forest fires burn more than trees" and "Please be careful with fire"—1969.

The FS and NPS are establishing zones to allow natural, lightning-caused fires to burn. For example, 340,000 acres in Yellowstone National Park, almost all of Rocky Mountain Park, Grand Teton and Sequoia and Kings Canyon National parks are managed under this policy. And in Montana, the Spanish Peaks area (Gallatin National Forest) is under consideration for such management.

But perhaps most significant is the FS White Cap study in the Selway-Bitterroot Wilderness on the Montana/Idaho border. This 100-square-mile study area may become the model for wilderness fire management all across the West.

Aldrich, deeply involved in the White Cap study, believes northern Rocky Mountain forests were "born of fire" and fire dictated the evolution of the timberlands. Before modern fire fighting methods, he notes, approximately 750,000 acres burned yearly in Region One. Now, total burned acreage averages only around 25,000 acres annually. For plant and animal communities dependent on fire, this reduction has created "an ecological impact," according to Aldrich. And even that, he believes, may be "a gross understatement."

Instead of viewing fire as a formidable foe, Aldrich wants people to view it as an ecological tool. It's neither friend nor foe—but both. Aldrich and his coworkers hope to reverse the unnatural impact of decades of ultraefficient fire suppression and, in turn, aid wildlife and save millions of dollars in public funds now devoted to fire control.

"The role that fire plays in the ecosystem can't be disregarded or thought of as all bad and not be tolerated in our society," Aldrich feels.

In the White Cap study area, researchers plan to closely monitor natural fires. They already know the existing flora and fauna characteristics. And they plan to carefully follow re-establishment of plant and animal communities.

To date, only one major fire—Fitz Creek, 1,200 acres—occurred in the study area. But researchers are already coming up with interesting bits of information. For example, deer, elk, bear and grouse were frequently observed in the burned area—grouse used the burn even while it was still smoking.

Referring to White Cap and similar studies, Forest Service Chief John R. McGuire remarked, "It has helped us to recognize more fully the important role fire plays in the natural environment. I think I can safely say that this type of management of natural fires in wilderness will become a fairly common practice in the Forest Service.

"But," he added, "these natural fires will be managed under scientific prescriptions. We will never just turn our back on them and let them burn."

Those words—"let burn"—have caused some problems for fire managers. Apparently, the "let burn" concept automatically brings negative public comments. So fire ecologists use "prescribed" burn, instead. Even when a natural fire is allowed to burn, it's still "prescribed."

In summary, federal agencies are slowly developing fire management plans that permit natural fires to burn in some areas and intentional prescribed burning in others.

The Department of Fish and Game believes this will benefit wildlife. However, Heilman correctly points out that "this is a very complex issue with much to consider."

Last year (1973) was the driest fire season ever recorded. "Drier than baked cotton balls," was the way the FS put it. In the Nov./Dec. 1973 MO, we objected to the quick suppression of 27 fires in the Bob Marshall, including 5 in the habitat-sparse Sun River Game Preserve. We acknowledged that the FS was headed in the right direction, but too slowly.

Asked about this, the FS feels 1973 was "too explosive" to allow fires to burn in that area. And no guidelines such as those established for the White Cap area exist in the Bob Marshall ecosystem. Because of these two points, all fires were suppressed again this year, a trend destined to continue for several more years.

The Department concurs with the philosophy of having "the right fire at the right time at the right place." In the meantime, however, Montana is slowly losing wildlife habitat in such places as the Bob Marshall Wilderness. Widespread wildfire would help reverse this trend.

Granted, some negative aspects of free-roaming wildfires exist. Sometimes wildlife even suffers. But we still feel a more open approach to fires—in many forested areas, not just the White Cap area—would have an overall positive impact on wildlife.

So Montana faces a most difficult situation. Fire benefits wildlife, but some justification for delaying additional burning exists.

For example, Aldrich feels, factors such as vegetation and topography differ considerably between the Bob Marshall and the Selway-Bitterroot. So each requires separate management plans. Hopefully, the planning process will proceed as quickly as limited funds and manpower permit. Detailed fire management should rapidly replace stubborn fire control. Then perhaps wildlife in the Bob Marshall and other western forests will prosper again as it did 30 years ago.

This new thinking needs widespread coverage for a very good reason. As pointed out by Aldrich, "The most technically sound program is doomed to failure if the public does not endorse it. Fire is a force which we must learn to use and manage rather than uncategorically fear."

THE SKI YELLOWSTONE PROPOSAL: *a new approach to environmental action*

by Bill Schneider *illustration by Vern Craig*

ON JULY 6, 1974, several Montana newspapers carried a short news item, "Wilderness Association wants cross-country area." At the time, it hardly seemed earthshaking. But before it's all over, this move by the Montana Wilderness Association (MWA) could kick off an entirely new logic toward environmental action.

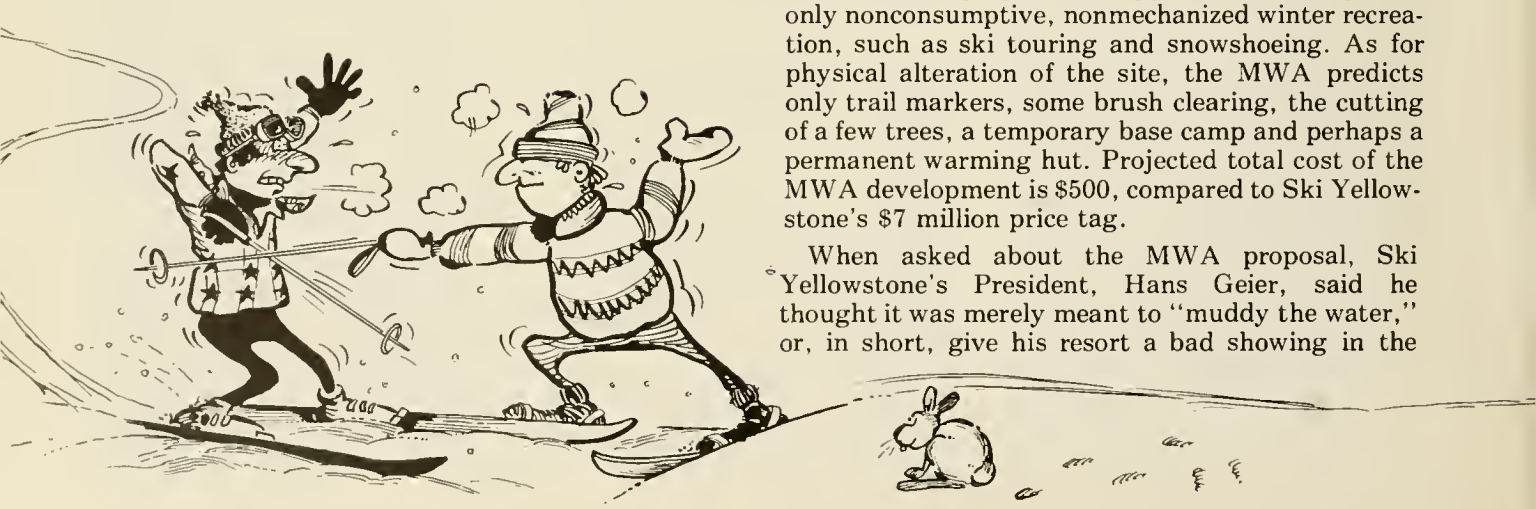
Perhaps the only reason the story received statewide coverage was a conflict between Ski Yellowstone, a proposed all-season recreation and second home development and the MWA cross-country ski proposal. Both were planned for the same general area.

Ski Yellowstone plans include 695 condominiums, 375 overnight lodging units, 245 single family residences, a full-service marina, shopping center, restaurants, hotels, a day nursery, lounges, swimming pools, stables and an environmental education center. All this will be built on 1,000 acres owned by Ski Yellowstone, Inc., adjacent to Hebgen Lake and only 13 miles from the west entrance to Yellowstone National Park. The proposal also includes a gondola, 13 ski lifts, a mountain-top restaurant and cross-country ski trails on Mt. Hebgen, which is *not* owned by Ski Yellowstone, Inc. (Mt. Hebgen lies within the Gallatin National Forest and within the boundary of the MWA's suggested winter recreation area.)

Because both proposals require permanent and private use of public land, they need a special use permit from the U.S. Forest Service. On Oct. 10, 1973, Ski Yellowstone, Inc. applied for its permit, and the MWA asked for one July 4, 1974.

The MWA proposal, if approved, would permit only nonconsumptive, nonmechanized winter recreation, such as ski touring and snowshoeing. As for physical alteration of the site, the MWA predicts only trail markers, some brush clearing, the cutting of a few trees, a temporary base camp and perhaps a permanent warming hut. Projected total cost of the MWA development is $500, compared to Ski Yellowstone's $7 million price tag.

When asked about the MWA proposal, Ski Yellowstone's President, Hans Geier, said he thought it was merely meant to "muddy the water," or, in short, give his resort a bad showing in the



public spotlight. "Obviously," he remarked in an interview with MO, "there are many thousands of acres of better cross-country skiing in other places. We think it would be better to ride to the top of the mountain on our gondola and then go cross-country skiing."

However, Doris Milner, MWA President, disagrees. "While we agree that the Mt. Hebgen area possesses winter recreation development potential," she wrote in the special use permit application, "we must qualify such use so that it complements the paramount values of roadless land and nationally-significant grizzly bear population."

When contacted by MO, Milner stressed that the MWA proposal was definitely not an underhanded tactic to delay or discourage Ski Yellowstone. Instead, she said, "We believe it is a viable and reasonable use of the area that warrants equal consideration by the Forest Service when granting a special use permit for the area.

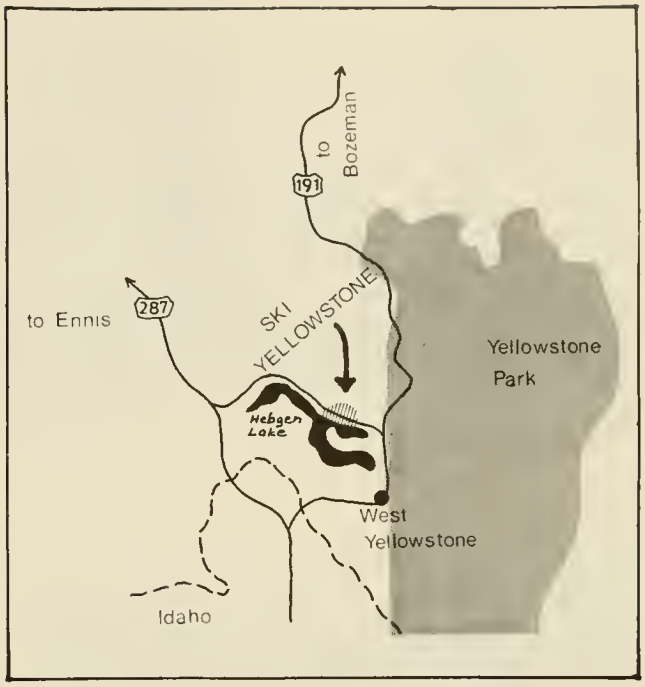
"Just because we don't plan to invest millions of dollars in the project," she continued, "it doesn't mean it's not worthy of full consideration. We asked the Forest Service to assure us that they won't commit the area to any other use at least until we are able to conclude our feasibility study for this cross-country ski area."

She also said the MWA has officially asked for 10 months to conduct its study, but that the Forest Service didn't guarantee that it would hold a decision until the MWA final report was completed.

Milner told MO the MWA was considering several options for the site, one of which would mean managing the area as a permanent, nationally publicized, cross-country ski resort. Under this plan, the MWA would charge an entrance fee to support administrative and maintenance costs. "The Forest Service doesn't seem to realize that we would propose this development even if Ski Yellowstone didn't exist," she remarked.

Lewis E. Hawkes, supervisor of the Gallatin National Forest, will make the final decision. He told MO that his agency would consider every possible use of the region, including both special use permit applications. He said the decision wouldn't come until "the spring of 1975" at the earliest. He also observed that such decisions are final and can't be administratively appealed like some FS positions. (This FS policy doesn't, however, prevent an "appeal" in the courts.)

The MWA application contained one more interesting point: "If the reconnaissance studies indicate that the proposed use would be incompatible with the maintenance of the overrriding values of roadless land and grizzly populations, this application will be voluntarily withdrawn by the MWA."



Viewing this as a significant point, we asked Geier if his corporation would also withdraw its plans if they proved damaging to "the overriding values" (as the MWA put it) of roadless land and grizzly bears.

He replied, ". . . we consider your question hypothetical . . .," failing to even mention grizzlies in his two-page letter. In his reply, however, Geier made it clear that, in his opinion, Mt. Hebgen didn't qualify as "roadless" because of timber harvesting and lift line construction on the site.

Rick Applegate, project leader of the MWA Special Mt. Hebgen Cross-Country Ski Area Study Team, confirms the presence of logging, a lift line and a badly eroded jeep trail in the area. "True," he told MO, "the FS didn't include Mt. Hebgen in any of their roadless study area, but that doesn't mean it lacks genuine wilderness values."

Milner said Mt. Hebgen may be within a future MWA wilderness proposal. "And even if it isn't within the wilderness boundary," she remarked, "a large recreational complex like this right on the edge would severely affect the wilderness."

Ski Yellowstone, the MWA and the FS will never completely agree. But that's not the point. It comes down to a new approach to environmental action. Admittedly, even many conservation-minded people grow weary of constant opposition to such development. But this time, instead of totally opposing a project, the MWA has offered a positive, reasonable, nonconsumptive, energy-saving alternative. It may very well become a precedent for "Ski Yellowstones" all across the nation.

HOW TO MAKE A NATURAL WREATH

by Kay Ellerhoff
photos by Tom Warren

Making a holiday wreath for your front door has lots going for it. It's inexpensive. The supplies and equipment needed are minimal. And that trek to the woods to gather the greens and berries might just create a greater appreciation for the magic of Montana's winter wilderness.

Essential equipment includes a saw, pliers, wire cutters, a sturdy pair of gloves and two types of wire. In the accompanying photos, we used #9 galvanized wire for the frame. But this is a bit heavy; #10 or #11 would adequately support the greenery. We used #19 *ungalvanized* wire to attach the greens to the frame. Ungalvanized wire lacks the bright, metallic color of the galvanized wire and thus it doesn't show on the finished wreath. Most hardware stores and building supply firms sell these two wire types in small quantities.

What you intend to do with your wreath obviously will determine the diameter of the frame with which you begin. If it's a centerpiece for a holiday feast, begin with a frame about 12 inches in diameter. If you plan to hang it on a door or over a fireplace, an 18-inch frame is probably about right. A frame only 18 inches in diameter makes a surprisingly large wreath.

Let your creativity and imagination wander when it comes to selecting materials. In the greens category, ponderosa and lodgepole pine are both flexible and pliable. We used these two as the primary greenery. Juniper adds pleasing texture and color—plus it has blue-black to whitish berries—but it's sometimes sticky and difficult to handle. Spruce is also attractive, but its stiffness makes it hard to manipulate into a prescribed shape.

Nature, of course, doesn't limit her offerings to greenery. It doesn't matter if you want red, white, orange or just about any hue in between, she has something to offer. For a touch of red, add a few rose hips or some kinnikinnick. Leaves from certain wild rose species turn a deep, rich burgundy. The kinnikinnick (or bearberry, as it's sometimes called)—a trailing, low-growing shrub—stays green and its berries retain their color for months. Creeping holly grape resembles the familiar common winterberry holly (which isn't native to Montana), but its *leaves* turn red. Snowberry provides a touch of white with its crisp, winter berries. Although somewhat perishable, pyracantha berries lend a cheerful orange-red flame color to your wreath.

When gathering greens and berries, look for deformed trees or those in crowded stands. Cut only the very lowest branches so the top, growing sections are left undisturbed. Use a saw to remove the branches; an ax often severely damages the tree. Branches trimmed from your own Christmas tree can also provide some greenery.

Pine cones can add a finishing touch. Attach them with heavy black thread, first fastening the thread around the center portion of the cone. You needn't visit crowded holiday stores to finish off your creation with a fancy "bow." Top your wreath with some Christmas ribbon you saved from last year or use pinking shears to give a serrated edge to some scraps of brightly colored material.

Perhaps most enjoyable, though, wreath-making brings the family together. Take along a jug of hot, spiced cider when you go to the woods to gather greens and berries. Enjoy Montana's winter, each other and yourself. That wreath that you build together will help ring in another holiday season. Can you think of a better way to give the Christmas spirit a boost?

—ring in the holidays with greenery—

Bend galvanized wire into a circle, making hooks at both ends. Fasten the hooks together securely. Use pliers to wind the edges together.

Attach the ungalvanized wire by putting it through one of the hooks of the frame, twisting until it is securely fastened.

Choose a handful of boughs. With one hand, place the boughs against the hook. With the other, wrap the ungalvanized wire around, at least three times, pulling it tightly each time.

Continue adding greens, always binding them to the frame with three loops of wire and fastening securely after each addition.

For a special effect, you might want to add a swath at the top. Fashion it of your chosen materials—here we've used pyracantha berries and reddish leaves from wild roses—using the ungalvanized wire to bind the materials together.

Attach the wire used to bind the swath together to the heavy, galvanized wire frame. You'll have to push through the greenery already attached to find the frame. (That's why we recommend wearing gloves when making a wreath.) Turn to the back cover for a view of the finished product. Wreath constructed by Tom Ellerhoff.

1975 MONTANA WILDLIFE CALENDAR–

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THE CATCHALL

Subdivision Court Test Opens the Gallatin to Public Access

Until recently, anglers were cautious when fishing the Gallatin River. Much of it—even the streambed itself—was posted, so fishermen couldn't walk or float the stream even when they were careful not to touch the privately owned shoreline. And even with such care, several "trespassing" anglers were chased from their favorite fishing holes with threats of legal action.

Then Karst Village came along.

The Gallatin County Commissioners approved the original Karst plat on June 28, 1973. This angered local conservationists, and subsequently, Trout Unlimited and the Montana Wilderness Association brought suit.

The suit stressed three points: (1) unlawful action by the Gallatin County Commissioners, (2) lack of responsibility and failure to fulfill legal obligations by the Montana Department and Board of Health and (3) illegal claim of public land by the subdividers. Of these, the latter eventually opened the Gallatin to public access.

At this time, subdividers operated under Section 11-600 of the Revised Codes of Montana which included a park dedication requirement. The Karst developers, Donald A. Corcoran and LeRoy W. Spain, named part of the Gallatin's natural streambed to meet this requirement. This, in turn, raised the ire of the conservation groups because they felt the streambed was already in public ownership.

The plaintiffs, represented by Bozeman attorney, James Goetz, based their case on a statute which read, in part, "The State is the owner of all land below the water of the navigable lake or stream . . . ." This means the public owns land below streams such as the Gallatin. It lies in "the public trust" for use by anyone, not exclusively by those who control the shoreline.

On the surface, defining a "navigable" stream seems easy. If it can be navigated, it's navigable. But it doesn't quite work that way.

In fact, only a few Montana streams—parts of the Missouri, Kootenai, Bighorn, Yellowstone and now the Gallatin—are officially classified as navigable. All others, even the larger rivers, have not yet legally been declared navigable. This means a sportsman can't cross private land while wading or floating on most Montana streams, even when he has legally entered the waterway.

To prove the Karst developers couldn't claim the Gallatin streambed, the plaintiffs were forced to prove the river was navigable. To accomplish this, they insisted:

—the river contained sufficient water to transport commercial goods,

—this transportation of goods need not be continuous; a seasonal ability was adequate,

—the public couldn't be denied the recreational use of such waters as the Gallatin River and

—the stream was "navigable in fact" simply because it obviously could be physically navigated.

In the brief filed before District Court Judge Gordon Bennett, Goetz cited court decisions from other states to back up these contentions. Of special interest to sportsmen, however, was a recent Idaho Supreme Court ruling. The Southern Idaho Fish and Game Association filed an action to prevent a private corporation from closing Silver Creek to the public. In his decision, an Idaho justice stated, ". . . there is no question in my mind but that this stream has been navigable for years and has been used for boating in connection with just the pleasure of seeing the area and for fishing, trapping, gaming, and fowling, those various attributes for which the river is 'natural.' "

Idaho's highest court found the stream "navigable" not only because it could support commerce or transport goods to market, but, more important, because it was capable of supporting wide-ranging recreation.

Like the Idaho Supreme Court, Judge Bennett declared the stream navigable. He relied mostly on the status quo meaning of "navigable"—the ability to provide commerce. Goetz proved this ability with historical documentation that the Gallatin was used to float logs between 1904-7.

Goetz also argued that the Gallatin deserved "navigable" status because of its diverse recreation potential including commercial outfitters taking customers on float trips on the stream. But this point wasn't mentioned in the district court decision.

Goetz still feels it's a valid point

continued

finally, one for the fisherman

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and predicts the next such case may well go this far. He told MO several other Montana streams qualify for free public access, but each would be decided individually.

For now, anglers can feel free to wade or float the Gallatin between the low water marks from a point where Taylor's Fork enters to the confluence with the East Gallatin. That opens over 50 miles of top fishing waters to free public access.

For more on the navigability question, refer to "Watch Your Step," page 15, May/June 1974 *Montana Outdoors.*

NONRECYCLABLE COKE BOTTLES

Just when most soft drink manufacturers are securely aboard the "recyclable" wagon, one of the giants has taken a turn for the worse. Coca Cola will soon market its beverage in nonrecyclable plastic bottles.

Manufactured by Monsanto Chemical Co., the bottles must be discarded after a single use because pressure from the carbonated cola stretches the bottles.

On the positive side, Monsanto hopes to develop a reusable plastic model that will require less energy to produce than the reusable glass bottle.

In the meantime, some 200 million pounds of the new, plastic, throwaway variety will be sold in 1975.

BISEXUAL POLISH FROGS?

Like the object of love at first sight, the 1,700-page $304 billion federal budget is something deserving a closer look. We are indebted to U.S. Rep. John Conlan (R-Ariz.) for taking such a look and finding the following proposed expenditures:

—To study the bisexual behavior of Polish frogs, $6,000.

—To determine if Frisbees might be used to carry flares, $375,000.

—To find out why many Americans say "ain't," $121,000.

—To conduct research on the smell of perspiration from Australian aborigines, $70,000.

—To establish travelers' aid centers for migrants who get lost on Los Angeles freeways, $203,979.

No doubt some bureaucrat can be found to justify each of these expenditures. Perhaps the Australian aborigines would perspire less if they could travel by freeway without getting lost. The Polish frogs may have turned bisexual through overexposure to flare-carrying Frisbees.

But if the bureaucrats are unable to determine why people are saying "ain't," we'll have a pretty good idea why so many voters this year are saying "no."—*Chicago Tribune*

READING YOUR SUBSCRIPTION LABEL

Which figures on your subscription label indicate expiration date?— the last four characters in the upper right hand corner—SO74. The last issue that Mr. Kuenzel received was the Sept./Oct. 1974 issue. Abbreviations for the six issues published yearly are: JF—Jan./Feb., MA—March/April, MJ—May/June, JA—July/August, SO—Sept./Oct. and ND—Nov./Dec. The year is designated 74, 75, 76, etc.

The long set of numbers left of the expiration date allows us to find your subscription in our files. If you move, please send the label from your last copy of *Montana Outdoors* along with your address change.

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PRYOR PICKED FOR BILLINGS INFORMATION POST

Bill Pryor has joined the Montana Department of Fish and Game as the information officer for Region 5 (Billings).

Bill Pryor

Pryor replaces Harley Yeager who moved to the Region 4 (Great Falls) information position. Dave Wedum, who held the Great Falls job, has joined the enforcement division as warden in Region 1 (Kalispell).

Pryor was the conservation education representative for the Illinois Department of Conservation. He also taught science to sixth, seventh and eighth graders in Joliet, Ill.

He earned a B.A. in philosophy from the University of Illinois and an M.S. in zoology from Western Illinois University. His thesis researched development and viability of Hungarian partridge eggs. He has done some post-graduate work on coral reef and terrestrial ecology at St. John's University in the British Honduras.

Pryor assumed duties Sept. 15.

HILL COUNTY COOPERATION YIELDS GOOSE NESTS

Because a group of people pooled time, energy and talents, geese in Hill County have an easier time finding spots to nest.

Over 30 goose nesting platforms were built—with the cooperation of the Department of Fish and Game, a local vo-tech group, farmers and ranchers, the Hill County Wildlife Association and Burlington Northern.

Joe Klabunde, Fish and Game commissioner from Havre, provided the initial push to get the project started and also moved the pipe used to support the platforms from Great Falls to Havre. The department furnished pipe, fiberglass for the platform bases and angle iron. Material for the actual platforms was provided by Burlington Northern.

The Kremlin-Gilford vo-tech class welded the pipe to the platforms and hay used for the nests was donated by Bill Gerky, a farmer who lives north of Havre.

The Hill County Wildlife Association put the platforms together. Frank Gjersing (department game management biologist in Havre) and the Wildlife Association placed them in ponds or reservoirs, on property owned by cooperating farmers and ranchers.

Gjersing says about six—or twenty per cent—of the platforms contained nesting geese. The platforms are a workable alternative to islands, the preferred goose nesting spot. Both islands and platforms offer security and apparently result in two to three times greater nesting success.

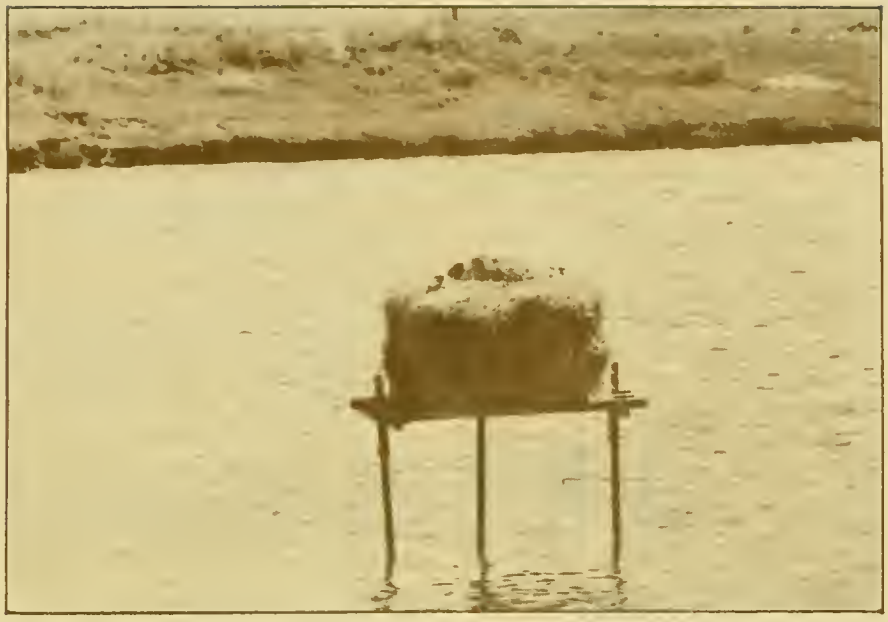
The Hill County goose platform project is a good example of what a few people can pull off if they just cooperate with each other.

FLATHEAD RIVER CLASSIFICATION

The Flathead River system and proposed classification of some sections under the National Wild and Scenic Rivers system isn't a simple subject.

The U.S. Forest Service has prepared a helpful abstract of information gathered in a two-year study. The booklet, "Waters of the Flathead," shows results of a land use study conducted by the FS in consultation with state and federal agencies, landowner associations, the general public, the Canadian government and a public advisory committee.

The booklet contains easy-to-follow maps which explain and delineate the various segments proposed for classification. "Waters of the Flathead" is available, free, from the Flathead National Forest supervisor, 290 North Main; Kalispell, MT 59901.



Man-made goose nesting platform. photo by Ray Nitz

MONTANA PRONGHORN TAKES FIRST

An antelope taken in Montana Hunting District 712 (near Little Porcupine Creek and Vananda), received first place in the pronghorn section of the North American Big Game Awards Program.

(In 1973, the Boone and Crockett Club and the National Rifle Association of America decided to cosponsor big game awards and records. The current awards program is the first to be jointly sponsored.)

The antelope, taken in 1973 by Jim Ollom of Enumclaw, Wash., earned a score of 89 6/8. Guide for the trip was Lonnie Gabrio.

The pronghorn was measured as follows: Length—(R) 17 2/8", (L) 17 4/8"; basal circumference—(R) 7", (L) 6 7/8"; length of prong—(R) 7 4/8", (L) 7 2/8".

GLACIER PARK CURBS LAND DEVELOPMENT

Glacier National Park officials made two commendable decisions recently.

First, the National Park Service (NPS) limited growth on private land in the Lake McDonald area by not allowing owners of undeveloped lots to hook up to a new sewer system soon to be constructed. (Private landowners who already have homes may tie into the sewer system because that isn't a change from the "historical use" of the lot.) A park spokesman said 94 private lots would have been immediately

continued

Next Time

Watch for these features in the Jan./Feb. 1975 *Montana Outdoors:*

—the pika	—the nonresident hunter
—nongame management	—forestry practices

Special emphasis—Where is Montana growing?—with articles on Gallatin Canyon, growth surveys in Missoula, land use and more.

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available for development if the owners could hook up to the new system.

And second, Glacier officials have brought condemnation proceedings against two park landowners to prevent subdivision.

One was Charles Green, a Coram REALTOR. This summer a federal marshal served Green with a condemnation notice for 142 acres in the southwestern part of the park.

Realty Holding Fund, Inc. owns the tract. Robert A. Svoboda, a former Montanan now living in Santa Barbara, is president, with Green acting as the local agent. At the time of the action, the word was spreading that Svoboda and company had a tourist camp of some sort planned.

Park officials have also started condemnation action on another 142 acres just within the West Glacier entrance, owned by the estate of Philip McFarland, and his brother, John. This move sparked pointed criticism from a Kalispell REALTOR, Paul Knapp, of Kenn's Realty: "They [the NPS] are playing dirty pool on this. As soon as we have a buyer for the land, the Park Service comes running out and starts talking about condemnation and the buyer runs away."

Park officials said they have been trying to purchase the site since the 1930s. The decision to condemn came after the prospective buyer contacted them Aug. 21, saying he wanted to log the land and then subdivide it into summer home sites.

contributors

If it's January or February and you're looking for **Bill Miller** on a chilly winter weekend, try Clark Canyon Reservoir. That's a spot he frequents in search of the ugly, bewhiskered ling. Although the ling might not win any beauty contests, it scores high on the dinner table. See his article and accompanying recipes, beginning on page 27. Miller is a fisheries management biologist for the department, headquartered in Deer Lodge.

Each winter, **Lester H. Loble II** spends many long and totally enjoyable days practicing his snowshoeing expertise. Besides this, he's an avid outdoorsman including a sporadic and perhaps "largely unsuccessful" hunter. He holds an outfitting permit from the department for his backpacking/outfitting company, High Country Adventures. Without his snowshoes or backpack, he's a Helena attorney. See his "How to Walk on Webbed Feet" article on page 19. It's part of another *Montana Outdoors* Recreation Guide entitled, "The Winter Wilderness."

His experience on cross-country skis includes treks in Alaska, the Canadian Rockies and western Montana. He has led ski tours and assisted with cross-country ski clinics for the Sierra Club. So **Jan Konigsberg** knows what he's talking about when it comes to cross-country skiing. Turn to page 16 for his section of MO's "The Winter Wilderness" Recreation Guide. He helped establish Freddy's Feed and Read in Missoula, an organic foodstore and a bookstore specializing in political and environmental literature. A former fellow at the Center for the Study of Democratic Institutions, he's now doing graduate work in philosophy at the University of Montana, Missoula.

THE "GOOD OLD DAYS" ARE HERE FOR HUNTERS

Nostalgia plays tricks on all of us. The old-timers who dream misty-eyed of greener years probably forget beating paths to the outhouse at -20°, the dim, oily light of kerosene lamps, or hand pumping water for a bath. Probably as a matter of self-preservation, the mind gradually discards bad memories and cherishes the good ones.

Hunters who live in the reverie of "good old days" are thinking back further than most of us can remember or they are recalling top-heavy deer populations of the late 40s and 50s—deer that were eating winter ranges into the dirt. They have forgotten the early 1900s when game was at an all-time low. They have forgotten 1915 when many felt that antelope were doomed to extinction, or 1910 when only 200-300 elk existed in the entire Sun River area.

In spite of the encroachment of civilization on wildlife habitat, in spite of the great number of hunters and their mobility, sportsmen of today enjoy better hunting now than they did in years past. Harvest records for 1973 are "proof of the pudding."

Let's take a look at last year's record and compare it with some years past.

Antelope—Antelope were abundant on Montana prairies as late as 1896 but dwindled to about 3,000 by 1924. There were no open seasons from 1903-1934. Trapping and transplanting in addition to other management began to re-establish decimated herds in 1941. During 1943, less than 600 antelope were harvested in Montana. Harvest for 1953 was 19,145; average harvest from 1963-1972 was 17,650; harvest for 1973 was 19,300.

Deer—Deer numbers have apparently had their ups and downs for a long time. Peak highs were in late 1880s, early 1900s, late 1920s and late 1940s into early 1960s. Hunter harvest through the years shows the first reliable harvest estimate of 50,000 in 1945. In 1953 the estimated harvest was 80,000; average annual harvest from 1963-1972 was 102,190 and in 1973 estimated harvest was 122,648.

Elk—With settlement of Montana, elk herds declined until only small fragments of original herds existed in western mountains. By 1910, transplanting was under way. Overprotection of some herds eventually resulted in deterioration of important winter ranges and periodic winter dieoffs from malnutrition. Comparison of hunter harvest over a period of years shows a take of 10,000 in 1946, the first year data was available. The harvest dropped to a low of 6,400 in 1953; averaged 12,061 from 1963 through 1972 and was 15,234 in 1973.

Montana hunters are enjoying outstanding opportunities. The "good old days" are here.—*Vern Craig*

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THE WINTER WILDERNESS

Montanans probably derive more enjoyment from the great out-of-doors than residents of most other states. In fact, Montana households without some outdoor recreation equipment are rare indeed. The Treasure State could, I suppose, even be renamed, "The Pleasure State."

Fortunately, Montana has a generous supply of remote backcountry to help provide all this outdoor fun. In the warmer months, thousands of fishermen, hunters, backpackers, mountain climbers, etc. flock to the wilderness. Oddly, though, these vast wildlands automatically become a secret and seldom visited snowy world when winter comes. With rare exception, Montanans patiently wait for spring, so they can start "getting out" again.

With this article, we hope to change this trend—to make the backcountry an all-season recreation opportunity for many more Montanans. Either the day hiker or the overnight camper can—with little expense, effort or danger—make easy and enjoyable use of the silent winter world.

Turn the page if you want to discover how to exchange winter "blahs" for new, exciting and challenging outdoor recreation opportunities.—*Ed.*

Winter camping in western Montana's Anaconda-Pintlar Wilderness. photo by Jerry Manley

CROSS-COUNTRY SKIING: simply stated—a sheer delight

by Jan Konigsberg

Before I became a cross-country skier, I more or less hibernated between the fall big game season and the spring fishing season. This changed several years ago when my father loaned me his Army surplus touring skis. Since then, summer seems a good way to pass the time between winters.

Cross-country (or Nordic) skiing offers a wide range of involvement, from competitive racing to family touring. Cross-country skiers learn at their own pace, choosing the terrain that suits their skill and mood. Depending on one's inclination, Montana offers the gentle snow-covered countryside of its broad valleys such as the Swan and Blackfoot or the more challenging slopes of its high country such as the Selway-Bitterroot. Often in a day's tour, a skier can strike out across the flats, climb a high ridge to a peak and circle back to the starting point. Montana is generous in its winter fare and can satisfy the tastes of all cross-country skiers.

TECHNIQUE

The cross-country skier doesn't need tow ropes or lift lines. The essence of this sport is the coordinated power of the human body propelling two strips of wood along flat lands and then up and down slopes. At first, the biggest challenge is merely to walk around without the skis sliding from under you, facing then the challenge of getting up!

The initial difficulty disappears after a few hours on skis. Begin by walking to get the feel of the skis. It is the walking rhythm that becomes the graceful glide that marks the diagonal stride. In the diagonal stride, one ski is pushed forward, causing the other ski and leg to be extended backward. The power drives the knee forward with the opposite arm also forward and the body bent slightly forward at the waist for balance. Poles provide additional power and balance. As you drive forward on one ski, simultaneously push back with the arm and pole on the same side. Then as you glide ahead on your forward ski, repeat the procedure by driving the other ski forward. Concentrate on pushing that knee forward and extending the other leg behind you. It's good exercise—and great fun.

To maintain an uphill tempo takes much more practice and conditioning than striding on the flats. The uphill stride is generated by a running/hopping motion with the legs bent markedly at the knees and the weight of the body ahead of the bindings. Most nonracers walk up slopes, using the herringbone or side step when necessary. On a steep mountain side, the skier traverses the slope to climb it. Take short steps, pressing the hillside edge of the forward ski into the hill. Be prepared to catch yourself with your poles if you begin to slip back.

The traverse is also a good way to descend. Ski diagonal to the fall line, stop, execute a kick turn or herringbone turn to reverse your direction, then continue the traverse. A bolder skier who prefers a nonstop run down either skis in the tuck, semituck or telemark position without turning or punctuates the run with step or telemark turns.

Step turn—Slightly lift the ski on the side of the turn's direction and step into the direction desired. Unweight the other ski and bring it parallel, completing the turn to the right or left.

Telemark turn—Start from the telemark position (one ski pushed forward until its binding is opposite the tip of the other ski). To turn, stem the forward ski. For example, if it's the right ski, turn the left edging slightly. This should bring you around using your poles to maintain balance.

Alpine turns such as jump and parallel turns are difficult on cross-country skis since they lack a metal edge and heel binding. When skiing downhill, keep your legs flexed, but flexible at the knees to absorb the shock of downhill running. Trail ski poles either outside or in between the legs to act as a brake. Unstrap the poles from your wrist when going down. To stop—snowplow. To stop immediately—fall, either by sitting down or by falling on your side (not exactly graceful but effective).

EQUIPMENT

Before buying equipment, consider the kind of cross-country skiing you want. Nordic skiing can be categorized as follows:

racing—on prepared tracks only.

superlight touring—on the flats or gentle hillside, where no trail needs to be broken.

light touring—on moderate terrain, breaking trail under most snow conditions.

touring—moderate terrain, breaking trail in all snow conditions, often while carrying a backpack.

ski mountaineering—on alpine terrain where slopes are very steep and snow conditions vary from icy crust to deep powder.

Most recreational cross-country skiers will use either light touring or touring equipment. The light touring ski is between 42-52mm wide, while the touring ski is about 60 mm wide. It pays to buy quality skis with 4-layer or 18-lamination construction, a hickory sole and "lignostone" (compressed beech wood) edges. Lignostone edges resist rounding off and provide good control after several seasons of normal usage. A well-constructed ski will outlast a ski of soft wood such as spruce or birch.

Although a plastic-soled ski requires no base preparation and is more convenient, it will not hold running wax as well as a wooden ski. In the waxless skis category, fish-scale skis are slow, while mohair strip skis perform nearly as well as a properly waxed ski.

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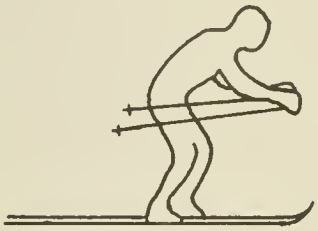
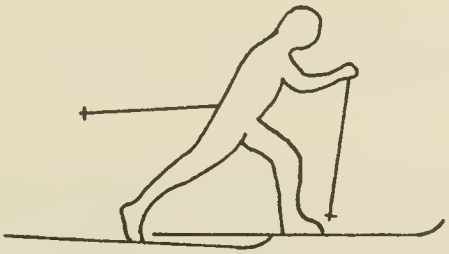
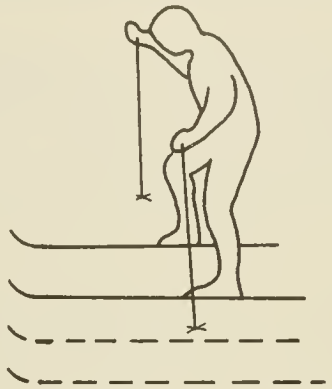
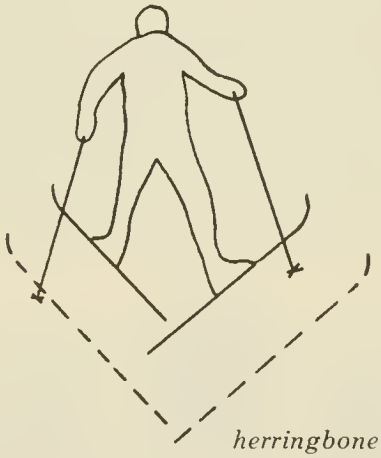




basic diagonal stride



side step



herringbone walk

telemark position

all illustrations by Donita Eaton

But whichever ski you buy, make sure you have the correct length. The proper length is the distance from the floor to your outstretched wrists—arms held straight above your head.

Fit the light touring ski with a lightweight, toe-pin binding designed for a low-cut touring boot. Use a cable binding with adjustable toe lugs on the wider touring ski. Hiking boots don't work very well with a cable binding because the boots lack flexibility for touring and the toe does not provide sufficient surface for the toe lugs to grasp. Cable binding restricts heel movement, but provides good lateral support. Such support is essential for turning on slopes with any real gradient. Turning on steep slopes can pop a boot out of a toe-pin binding or bend lighter bindings during a fall.

Cross-country ski poles usually are constructed of bamboo or tubular aluminum. The bamboo pole is traditional. It is springy, inexpensive and perfectly adapted to light touring. For long tours and steep traverses, the metal pole is the better choice since it absorbs more force before fracturing.

Light touring equipment seems to be the most popular nationally, particularly in the East where it is ideal for New England terrain. Unless you intend to ski primarily on Montana's old logging and mining roads or bottomlands, light touring equipment is unsuited for mountainous terrain and snow conditions. If you want to tour the higher mountain country of the Bitterroots, the high ridges surrounding Whitefish's Big Mountain, Missoula's Rattlesnake drainage or even the Canadian Rockies, you need the strength and flotation that the wide touring ski provides. In deep snow, the light touring ski bogs down, while the wider touring ski keeps on breaking trail. Whatever your choice, expect to spend under $115 for the best of equipment and as little as $80 for adequate equipment—skis, poles, bindings and boots.

WAXING

Before the ski is ready to use, prepare the base for waxing. At the factory a thin, protective coating is applied to the wood sole. Remove this coating with fine grade sandpaper. Next apply *Grunvalla* to the soles of the skis to seal the wood from moisture and to provide a proper surface for the adherence of the running wax. There are two types of *Grunvalla:* One is painted on and allowed to dry and the other must be burned into the sole of the ski. The burn-in type (ordinary pine tar is also excellent for this purpose) is the superior base preparation. Apply the burn-in type base preparation directly to the ski with a rag. Move the flame of a hand-held butane torch rapidly back and forth until the tar bubbles—(it may flame but don't worry)—then wipe off the excess with a rag. Move down the ski, tarring 12 inches at a time until finished. If your finger tip leaves more than a slight impression on the tarred surface, reheat the tar and wipe off the excess. Let the ski set overnight before waxing.

There are two kinds of running waxes—hard wax and klister (four basic hard waxes and four basic klisters). (So-called base wax is not a running wax and is not essential to good waxing.) To choose the right wax for snow and temperature conditions, consult a waxing guide. Stick with one wax brand until you learn its capabilities and actual ranges.

When applying a hard wax, draw the stick of wax lightly down each side of the groove (never wax the groove). With a cork, or with the heel of your palm, rub the wax to a thin layer, covering the entire surface. Using a klister is a bit like waxing with syrup. Gently press the tube of klister from the bottom and with the opening of the tube pressed against the sole of the ski, run a thin narrow strip on each side of the groove. Smooth the klister with the heel of your palm or with a waxing iron. A torch will soften any of the waxes before they are smoothed out. Don't use a torch on a cold ski. Make sure the waxing is thorough, because unwaxed portions freeze up between 26-32°.

Once you begin skiing, allow the wax about 100 yards to set up and start performing its magic. If the skis slip, apply the next softest wax; if the skis accumulate snow, use the next hardest. Do not apply a harder wax over a softer one; scrape the soft wax off first. Layers of wax should not accumulate on the ski. Periodically, remove the bulk of the wax with a scraper and remove the remainder with a torch.

Waxing can be terribly frustrating. It takes time to learn, but you'll get the knack of it. Some days require frequent changes of wax to adapt to changing conditions and other days nothing will work well. No wax works at 32° outside air temperature—so stay at home or use snowshoes!

CLOTHING

Now that you're waxed up, are you dressed right for the tour? Cross-country skiing is exhilarating and strenuous exercise, so don't overdress. Because knickers provide the greatest freedom of leg movement, they are ideal Nordic ski pants. Corduroy, cotton or nylon blend knickers are best because wool knickers are usually too warm. Wool knicker socks should be worn since they shed snow and retain heat even when wet. If long-legged pants are worn, they should be loose and worn with wool socks. Gaiters worn over the cuff help keep snow out of the boots and the feet dry. While skiing, a heavy cotton or light wool shirt or wool sweater will suffice. On a very cold day, wear a down vest under a light windbreaker. A heavier jacket is toasty for mealtime or "sit down and enjoy the woods" stops. On cool days, cotton work gloves are most comfortable. The most versatile gloves are mittens with wool inner shells and leather outer shells. Worn separately or together these shells protect over a wide range of temperatures. On warm days, don't wear a hat because your head radiates heat. On colder days, wear a good ski hat, such as a wool balaclava, to conserve body heat.

Your touring outfit should be functional, not fancy. Dress for freedom of movement and proper insulation.

SKIING

Now that you're equipped, skis waxed and ready to run, a word of caution. Avoid touring areas above your level of skill. Although cross-country skiing injuries are rare, they *do* occur. In many respects, cross-country equipment is inherently safe. During most hard falls, either the boot will pop out of the binding or a ski will break preventing serious injury. Always carry an extra ski tip for such an emergency.

Never ski alone and on long tours, ski with at least two others. If an injury occurs, the injured person can seek help and the other stay with the victim.

A tired skier is prone to accidents, so don't overextend yourself physically. Fatigue results in strained or pulled

muscles or even worse, hypothermia. Proper conditioning prevents such problems. Bicycling or jogging provides excellent conditioning for the winter season.

Be prepared for winter weather conditions and the physical requirements of a tour. Knowledge of winter survival skills, avalanche signs and mountain safety techniques could save your life.

Touring is sheer delight—almost as if you were gliding along on white fields of cotton candy. The countryside has all the magic of an old-time carnival—thrill, chills and spills galore. Like snow swiftly covering fresh tracks, all your troubles disappear. You and your companions share a bit of Montana and each other, leaving all you find for yet others to enjoy.

SNOWSHOEING:
inexpensive, easy winter fun

by Lester H. Loble II

It's very cold, of course, but that's not what you notice because the sheer exertion of snowshoeing keeps you warm. When you get home and prop those tired feet up in front of a roaring fireplace, perhaps sipping a cup of hot chocolate, you'll know you did a lot more that day than watching football on tv and eating peanuts. It won't be the tired or cold that you'll remember. Instead, you'll recall the complete solitude as you stood in the utter quiet of the snow shrouded forests, surrounded by unmarked powdery, virgin snow.

A snowshoer knows and appreciates the Montana winter as no ski enthusiast or snowmobiler can. The snowshoer is not limited to steep, well-groomed slopes like the alpine skier, nor to the gently rolling valleys that cross-country skiers prefer. The snowshoer walks along the spines of mountains where the vistas are spectacular and limitless. He walks on frozen streambeds, over deadfall and through thickly grown forests that would be inaccessible in the summer. The ability to travel otherwise inaccessible backcountry is what sets the snowshoer apart from all other winter sportsmen.

SNOWSHOE TYPES

Snowshoes were developed by North American Indians and Eskimos. These designs resemble the "bearpaw" snowshoe common today.

The two basic types of snowshoes are bearpaw (oval) or trailer (elongated). (See illustration.) Bearpaws are flat, while the trailers are usually turned up at the tip. Bearpaws generally measure 24 x 15 inches and trailers measure 36-48 inches x 8-12 inches.

Snowshoes are usually constructed with a wood frame and rawhide webbing stretched across the frame. Polyethylene webbing replaces the rawhide in some models. These two types of snowshoes, properly maintained, offer years of service.

Snowshoes are also constructed entirely of molded plastic. I have a pair which taper sharply at the tail. They are very unstable in snow and I can't personally recommend them. Some reports indicate this type of snowshoe becomes brittle and breaks in cold, subzero weather. If you choose plastic snowshoes, make sure they are wide, stable and can withstand the cold.

I recommend ordinary wood and rawhide bearpaws. I travel as far and as fast on bearpaws as on trailers and I've sometimes outdistanced cross-country skiers. (Snowshoe racers have completed 100-yard courses in slightly over 10 seconds. That's just a shade slower than the 100-yard dash on a cinder track in midsummer, so it is possible to cover a lot of ground on snowshoes.) Bearpaws are more maneuverable than trailers. Except in conditions of light, fluffy or powdery snow, they support the average man or woman as well as trailers.

On the other hand, persons of above average height and weight should probably purchase trailers. They offer a greater surface area and therefore support more weight in powdery snow conditions. Trailers are better for long, cross-country trips over unbroken trails. However, since

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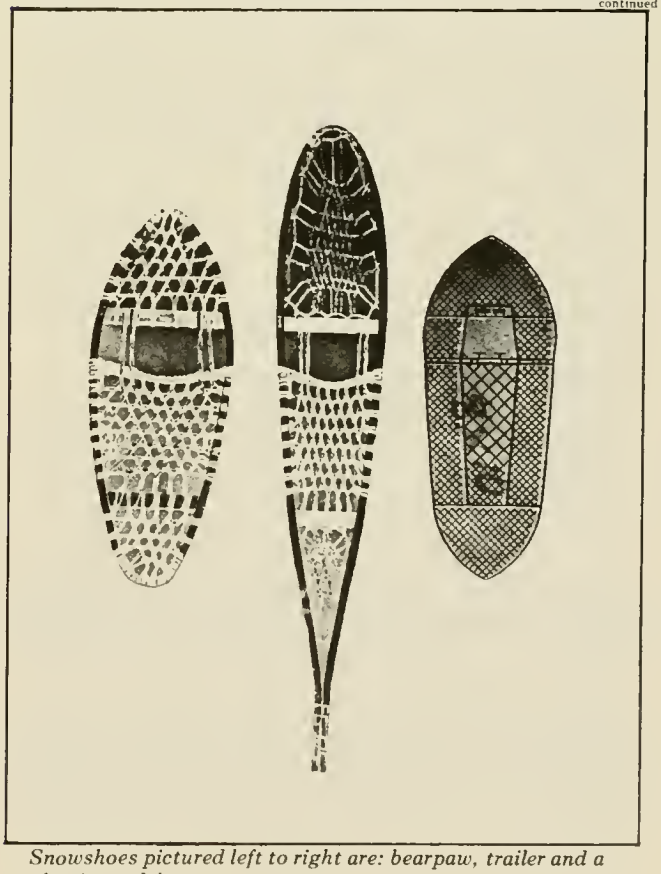


Snowshoes pictured left to right are: bearpaw, trailer and a plastic model.

beginners probably won't make such trips, bearpaws are adequate for a day's walk in the woods.

No doubt you're already wondering how much all of this is going to cost. The snowshoer has a built-in advantage of no tow tickets to purchase and high-priced stretch pants aren't necessary because you don't have to worry about looking good when you stand in long lift lines. A complete outfit costs $35-$50. Cost of snowshoes ranges from $25-$40.

Snowshoes are usually sold without harnesses—the straps that hold the toe of the boot to the snowshoe. This allows a natural hinge action where the heel lifts with each step. Leather or neoprene is usually used for harness construction. Cost runs from $7-$15.

Snowshoe maintenance is simple. You'll need marine spar varnish, a brush and steel wool. At the end of the season, coat the rawhide webbing and the hardwood frame with varnish. After the varnish dries, rub the webbing and frame with steel wool to roughen the first coat of varnish. This prevents the second coat from "slipping." Apply a second coat of varnish, roughen it and then apply a third coat.

Do not varnish the harness. Waterproof it, if it's made of leather; otherwise, no maintenance is required.

Failure to varnish the webbing and wooden frame results in rapid wear on the snowshoe. The wood wears because it is unprotected and the unvarnished webbing retains water. It will stretch and lose its strength. If you step on a hard piece of snow or a branch, the webbing will snap.

Snowshoes made of materials other than leather and hardwood require no maintenance.

OTHER EQUIPMENT

The following equipment is helpful for a day's trip:

ski poles—one or two, used as walking staffs and for balance. If you fall, a ski pole helps you get up.

waterproof boots—warm, comfortable. Snowmobile boots or insulated rubber boots are adequate.

warm clothing—several layers. As you climb a steep hill, you may sweat profusely. Remove a jacket or sweater to cool off.

dark sunglasses—a necessity. Sun reflected from snow is brilliant.

binoculars—to help you spot game.

lunch—to sustain you on the day's trip.

You are now fully equipped, looking a bit like a stuffed penguin, and ready to begin.

"HOW TO" FOLLOWS TWO BASIC RULES

If you learn two basic rules early, snowshoeing will be easy: "*Never back up,*" and "*Walk naturally.*" Like rules for other sports, these two seem contrary to your natural instincts.

The reason for the first rule, "Never back up," is simple. If you back up, you'll fall. Snowshoes are designed for forward walking only. When you lift your foot, the tail of the snowshoe stays on the snow's surface. If you step backward, the snowshoe is driving *into* the snow, rather than skimming the top of it. After climbing out of the snow a few times, you'll believe that "Never back up" is an excellent rule. To turn around, walk in a small semicircle instead of backing up.

The second rule, "Walk naturally," saves wear and tear on your moving parts. Perhaps because you're dressed like a penguin and have acquired large, flipper-like feet, you'll tend to waddle along with legs apart. This tires you rapidly because you're stretching and moving muscles usually not exercised. Believe it or not, those big, wide things on your feet will glide over each other in midstep very nicely. Simply walk as you ordinarily do.

PRECAUTIONS

As in any winter sport, a few precautions are necessary. With snowshoes, you are close to the ground and moving slowly, so a fall usually isn't serious. Carry light nylon cord for emergency repair to the webbing or a harness. Watch your harnesses; if one shows signs of wear, carry a spare. Always take basic survival gear, such as waterproof matches, high energy food, a map and compass, etc. (For a complete list, see page 42 of the Sept./Oct. 1974 *Montana Outdoors*.)

Avoid any snow cornice overhanging a cliff or a gully. If it breaks, you may have a long, hard fall. Cornices and snow bridges sometimes develop over holes in the ice on lakes. If they break, you plummet into icy water. The same considerations should apply to streambeds. If the streambed is well covered with snow and if the temperature has stayed cold for a fairly long time, it is generally safe to use as a trail. An unobstructed trail makes snowshoeing easier.

Don't run or jog on snowshoes, particularly when alone. If you break or sprain an ankle miles into the woods, you can find yourself in a very dangerous situation.

When navigating dense forest, avoid stepping near fallen or standing trees. Hollow areas extending a few inches from the trees give way when you put your weight on overlying snow.

As you walk, watch the terrain. Don't rest the toe of your snowshoe on a rock and the tail of your snowshoe on another rock or log. The middle of the snowshoe is suspended and when you place your weight on it, the wooden frame might break.

LIMITLESS ADVENTURE

The only terrain that presents problems to the snowshoer is a long, side-hill walk (traverse). Here cross-country skis have an advantage. It is difficult to edge the snowshoe into the hill and walk around the side of it—you'll find it easier to go up the slope at a steeper angle.

So, the places you can snowshoe are nearly limitless. Go to the edge of town, strap on your snowshoes and begin walking. Both Yellowstone and Glacier National parks offer spectacular beauty and are worth the travel. Yellowstone has elk, deer and moose, which can be observed at close range. During the winter, you don't have to worry about bears because they are hibernating.

Mountain passes, such as MacDonald Pass west of Helena, provide abundant snowshoeing opportunity. You can walk along the spine of the Continental Divide and aren't limited to trails. High mountains, such as Mt. Baldy or Mt. Edith on the east shore of Canyon Ferry Reservoir near Helena, provide snowshoeing into June.

Your area undoubtedly provides similar opportunities. Strap on your "flippers" and give snowshoeing a try.

WINTER CAMPING: enjoying Montana's finest moments

by Bill Schneider

After reading the title, you're probably thinking along the same line I was a few years ago when friends asked me to go winter camping. My first thought was a prank of some sort, so I met the invitation with a smile and, "That's good, but did your hear the one about . . .?"

But they were serious, and after a few minutes I was intently listening. So in mid-March I found myself lugging a 35-pound pack up a gentle grade into the Anaconda-Pintlar Wilderness. We stayed at Upper Seymour Lake, had some great fishing and were never miserable, even though the mercury dropped to -10°.

That first trip a few years ago was the clincher. I was sold. Winter camping is hardly a joke. It's a completely new and totally delightful way to round out your recreational year.

I'm an avid backpacker in warm months. That coupled with hunting, fishing and other activities took care of my limited amount of leisure moments during the spring, summer and fall. But when winter came, I usually kept busy inside while backpacks, tents, sleeping bags and other summer companions hibernated downstairs.

Winter camping with snowshoes and cross-country skis changed all that. (I've tried both, but personally, I prefer skis. However, dedicated snowshoers have some hard-to-beat arguments.) It allowed me to enjoy, during winter, places only visited by summer hikers. I found a new white and wonderful world—rich in unblinking stillness and mobile freedom—like an enormous, untouched astrodome to which only I was admitted.

I saw the outdoors in a new light—a better one. The winter snow conceals many of man's mistakes, the scars on the landscape. No pesky insects, rodents or bears interfere—there's just the winter camper and a silent wonderland.

THINK LIGHT

With the right equipment and preparation, winter camping becomes as comfortable as summer trips. In fact, outfitting your trip differs only slightly. In winter, the standard backpacking rule is even more important: Think *light*. Admittedly, carrying a pack on skis or snowshoes requires more strength. This added to the increased weight of more and better equipment demands extra caution in planning a multi-night winter trip.

Shelter: Winter campers have two choices for this absolutely essential element. They can pick a good—and unfortunately, sometimes expensive—all-season tent, or they can rely on snow caves or igloos.

The latter option has a smaller following because an igloo or snow cave requires much time and energy for construction. However, snow caves and igloos are roomy, warm and perhaps more convenient than tents. (See illustration, page 22.)

Adequate winter tents must have certain features, such as:

- *lightweight construction*—It should weigh no more than three pounds per person. For example, a two-man tent should weigh less than six pounds.
- *ample size*—It should be large enough for everyone to take gear inside and still leave sufficient room for sleeping, cooking and eating.
- *proper poles*—Poles should fasten onto both the top and bottom of the tent so they won't sink in the snow. They should be lightweight aluminum and pack in small, convenient sections.
- *good fabric*—Floor and lower walls must be waterproof, while the remainder of the tent should be lightweight nylon that allows the tent to "breathe" (transfer air). It also must be windproof.
- *good ventilation*—This is essential; don't buy a winter tent without adequate ventilators.
- *cooking hole*—A zippered or Velcro "trap door" for the cooking stove is convenient, although not absolutely essential. You can place the cooking stove on a foam pad, for example.
- *vestibule*—A tunnel/sleeve door isn't necessary during summer trips, but most all-weather tents have one. Better tents have both a vestibule and standard, zippered door.

Sleeping gear: Although prices run high, a wide variety of good sleeping bags is available today. Many ski touring pros insist the extra heavy "expedition" bags with 3-3½ pounds of down aren't needed. They prefer the lighter, but well-constructed, down bags.

My experience indicates that if you can afford a few extra ounces in your pack, a warm sleeping bag can't be beat. Avoiding bag construction details, it will suffice to say that reliable dealers offer models that meet most winter camping needs. Obtain reliable information before you buy a bag.

The bag only partially fills the winter camper's sleeping needs. A foam or ensolite pad is almost as important. Thicker foam pads are, of course, more comfortable. But often the extra bulk rules them out. A 3/8-inch pad will do. A full-length pad is better because it keeps the entire body, including legs and feet, off the snow. Again, the extra bulk may be too much.

Incidentally, air mattresses are definitely out for winter trips. The air-filled tubes convect coldness, and actually cool the sleeper instead of insulating him.

Packs: Frameless rucksacks are preferred over the common aluminum pack frame and pack used by most backpackers. The rucksack allows more freedom of movement. Pack frames can carry more weight by distributing it and situating it higher, but this makes them more difficult to balance. This is, of course, more critical for the skier than the snowshoer.

I've used my summer pack frame with both snowshoes and skis with little complaint. Rucksacks are fine, but

continued

they're expensive and can't carry as much as a pack frame.

Whether you pick a pack frame or rucksack, make sure the lower half is waterproof. Your pack invariably spends some time sitting in snowbanks.

Food: Menu planning differs little from summer trips. Perhaps the biggest difference is "one-pot planning." This means, in short, that meals should require one pan. For example, cook soup or a hot drink first, and then heat a stew-like supper in the same pan.

An incredible selection of "trail foods" has poured onto the market in recent years. But even in this age of freeze dried chocolate ice cream, I still prefer to do my shopping at the supermarket. It costs less and standard foods aren't much heavier than some of the freeze dried fancy food. To my taste, many of those new trail delicacies have an undesirable flavor.

On long trips, one must be concerned about good nutrition. But on weekend or slightly longer excursions, a more reckless approach to eating can be tolerated. Simply pack lightweight, high energy, easy to prepare foods and enjoy eating "just like home."

Cookware: Keep this to a minimum. Usually, one pot, a large plastic cup, an eating spoon and a cooking spoon will do. Never take a metal cup. It freezes and can hardly be touched. When it's filled with hot liquid, it's impossible to handle. Although some prefer to eat and drink from the same cup (or "bowl"), I still bring a plastic cup and a flat plastic bowl so I can eat and have my hot tea simultaneously.

Clothing: Refer to the articles on snowshoeing and skiing. Dress yourself for the mode of locomotion you prefer, and you're generally ready for winter camping. You might add some down "booties" so you can take your boots off in the tent and a heavier down parka for added warmth.

Other essential equipment includes: a reliable stove, plenty of fuel (sometimes snow must be melted for drinking and cooking), snow shovel, first aid kit, waterproof matches, candles, sunglasses, compass, knife, extra clothing, water bottle, flashlight, topo map of area, sun tan lotion, extra ski tip (in case of a broken ski) or snowshoe repair material, and basic survival gear. Leave your tent's "fly sheet" at home unless you expect rain.

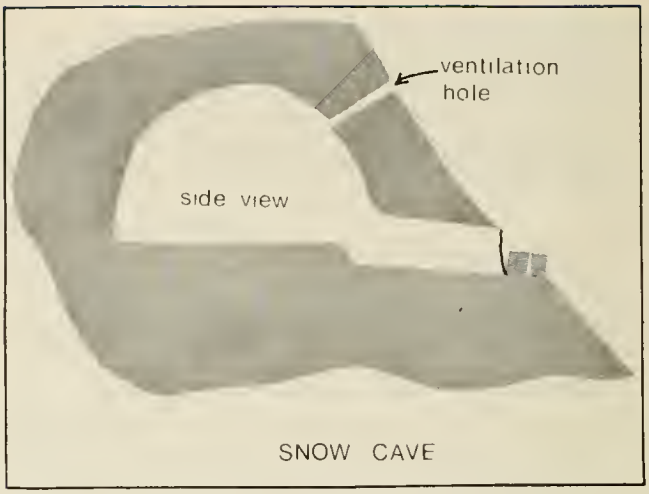
Depending on how much weight you can handle, pack a few optional items, such as a candle lantern, fishing gear (if it's part of the trip), cards or camera gear.

Many mountain lakes remain open to winter fishing and I enjoy fishing them through the ice. This presents one problem—you must carry a heavy ice auger with extra sections. A standard ice auger often won't reach through thick mountain lake ice, so take at least one extension. The rest of your fishing gear—line, hooks, weights, one bobber and bait—can nearly be carried in your front pocket.

When setting up camp, try to find a sheltered site (with a windbreak) near free water. A stream, spring or lake will save considerable time and fuel otherwise spent melting snow.

The campsite must be away from avalanche hazards. A bench a hundred or more feet above the valley floor will be warmer than the bottom itself.

Start setting up camp at least two hours before night falls. Pack down the snow instead of digging out a space for the tent. Pack it with skis first and then further compact it with boots.



The winter camper must expect the unexpected. Be familar with avalanche signs. Never camp alone and preferably go with at least two other people. (In an emergency, two people can carry an injured or ill person to safety. One companion can't.) Know basic winter survival rules, and be prepared to bivouac. By knowing fundamental survival rules, and avoiding panic, you can withstand most calamities.

Like summer backpacking, winter camping conjures up a vision of youthful, bearded "mountain men" carrying 100-pound packs up sheer slopes. Both winter and summer backpacking require some physical conditioning, but no more than everyone should maintain simply for the sake of good health.

Your body will accomplish whatever you condition it to do. If you can handle overnight summer hikes, you can—with a little more effort—enjoy winter camping.

I guess it all comes down to, "How do you want to spend your winters?" Do you prefer television and a sedentary existence that only adds inches onto waistlines?

Or, do you like the idea of leaving addictive tv and a gray, unsmiling city for a vigorous world of free movement, close to nature?

I hope you choose the latter because I believe nature's grandest moments go unobserved every winter day.

ADDITIONAL READING

Brady, Michael, Nordic Touring and Cross-Country Skiing, Arthur Vanous Co., River Edge, NJ; 1972, 92 pages, paper, $3.

Bridge, Raymond, The Complete Snow Camper's Guide, Charles Scribner's Sons, New York, 1973, paper, $4.95.

Caldwell, John, The New Cross-Country Ski Book, The Stephen Green Press, Brattleboro, Vermont; 1971, 128 pages, paper, $3.95.

Osgood, William and Hurley, Leslie, The Snowshoe Book, The Stephen Greene Press, Brattleboro, Vermont; 1971, 128 pages, paper, $3.95.

Tejada-Flores, Lito and Steck, Allen, Wilderness Skiing, Sierra Club, San Francisco-New York, 1972, Sierra Club Totebook, 310 pages, no price listed.

LAND IS A ONE-TIME DEAL

I want to express my appreciation for *Montana Outdoors*. A beautiful representation of Montana's natural resources, it is a strong advocate of maintaining—through careful use of those resources—an environment which will support a high quality life for humans as well as a secure environment for the wildlife whose management is the mission of the department and commission.

If, by virtue of this mission, the department and magazine incidentally play a firm, aggressive and even regulatory role in protecting man's environment against abuse, this will forever benefit Montana and Montanans. It will also be to the credit of the department for its early recognition of the interrelationship of man and wildlife in this one and only land of ours.—*Mrs. Ruth M. Koch; Butte, Mont.*

RUINATION OF MONTANA'S NATURAL SPLENDORS

I'd like to add a few unrelated points to comments that have been made in your magazine about the ruination of Montana's natural splendors.

(1) More acres of beautiful land are being ruined every year by good old native Montanans than by recreational subdividers or residential developers working near towns. Take a look at some of the old ranches, overgrazed, denuded of all good-sized timber, spotted with fallen sheds and collapsing fences and junk machinery. Try to tell me there aren't plenty of reasons for a developer to declare he is *improving* the land!

The old, old, places, log buildings and broken wagons were and are attractive. Those who are spoiling the range, forest and scenic value of our state right now don't have such picturesque material to do it with, but it's obvious they don't care. They're following a "tradition" of leaving everything where it died, despite the fact that there are now reasons and methods for disposing of the useless and unsightly. How about *Montanans* setting an example for others in maintaining the beauty of the land?

(2) I'm sure this is not a matter of state policy, but it seems a fascinating oddity to us anyway: While Yellowstone National Park allows endless numbers of snowmobilers to race around in the park unsupervised, officials refuse to allow entry to a growing group of sportsmen who drive dog teams. The reasons given are that the dogs will frighten wildlife and will undoubtedly leave the packed trails, thus injuring young trees, etc. (A dog team in harness is incapable of traveling more than two or three mph in deep, unpacked snow. How fast can a snow machine go in the same conditions?) This seems a strange policy for the National Park Service to maintain, while at the same time gradually phasing out motorized vehicles and protesting pollution in general. Unleashed pets run all over the park all summer. Team dogs are never unleashed; they don't smoke, screech, roar or cut new trails at 30 mph. What kind of strange discrimination is this?—*Mel Fishback; Kila, Mont.*

WILDLIFE'S GREATEST VALUE

I was delighted with your article, "Singing a Song for Unsung Wildlife," in the March/April 1974 *Montana Outdoors*.

I have done much hunting, but always believe the greatest value of wildlife is to the eye of the beholder. And far more people are able to enjoy nongame birds and mammals than hunted species.

I have always desired that some of my license fees be used for preserving nongame species, but I also believe that a part of the state general fund should be appropriated each year to enable their better management.

Keep up the good work in putting out one of the best outdoor magazines in the country.—*Cecil E. Gubser; Billings, Mont.*

SLAP IN THE FACE

A little over a year ago, I gave a number of subscriptions to *Montana Outdoors* as presents. I thought you were doing a fine job. Some of these subscriptions went out of state. Your Jan./Feb. 1974 issue was a slap in the face to these people as well as to anyone living in the country.

I happen to live two miles from town. We regularly see deer and have periodic visits from a small herd of elk. My neighbors and I love to see the game and would think no more of shooting one of them than we would a pet. In fact, we do not keep dogs or cats because we feel they might disturb the game. I believe people live out of town because they do love these things. They are probably your best protection for the game. I'm sure there is more game up and down this valley now than there was in David Thompson or Lewis and Clark days.

Are you advocating the denial of people's rights to own property or live where they choose? Sanders County has 935,000 acres or 52 per cent of its total acreage in federal land. Large private ownerships comprise 169,000 acres or 10 per cent. Even the state of Montana has 62,000 acres, so how can you say the nasty people are hogging it all?

Get smart. The best friends you and the game have live in the country.—*Bob Van Derhoff; Plains, Mont.*

REPRINT SHOULD FOREWARN OF DANGERS

After studying your reprint, "The Wild Missouri" (May/June 1973 *Montana Outdoors*), we made the float trip down the Missouri from Fort Benton to the Robinson Bridge. While the trip was generally pleasant, the reprint does not properly emphasize some of the dangers of the trip.

Under certain light conditions, the ferry cables at Loma and Virgelle blend into the background. If they are too low, they will not allow unobstructed passage to cabin-sized boats. When the water is high and swift, the cables are unmarked by warning signs of any kind.

At Loma, the ferry was docked unattended on the left bank and it was necessary to walk the boat under the cable on the right bank. The floating was treacherous and the water was swift. While we were maneuvering the boat under the cable we were unable to see a fence extending into the high water and one of our party was slightly injured when she stumbled into it.

We thought these conditions should be called to your attention so they can be included in future information about floating the Missouri.—*Arvi A. Kangas; Highwood, Mont.*

SPRINGBOARD

"The function of wilderness as a reservoir of genetic variability, a resource which can last only so long as it is not subjected to practical tinkering, thus becomes obvious. Wilderness is an investment in a biological currency we cannot specify, a hedge against a biological need we cannot name."—*Jon Ghiselin, "Wilderness and the Survival of Species,"* The Living Wilderness

FOR DISCUSSION

100% recycled paper

GET BACK TO THE FACTS!

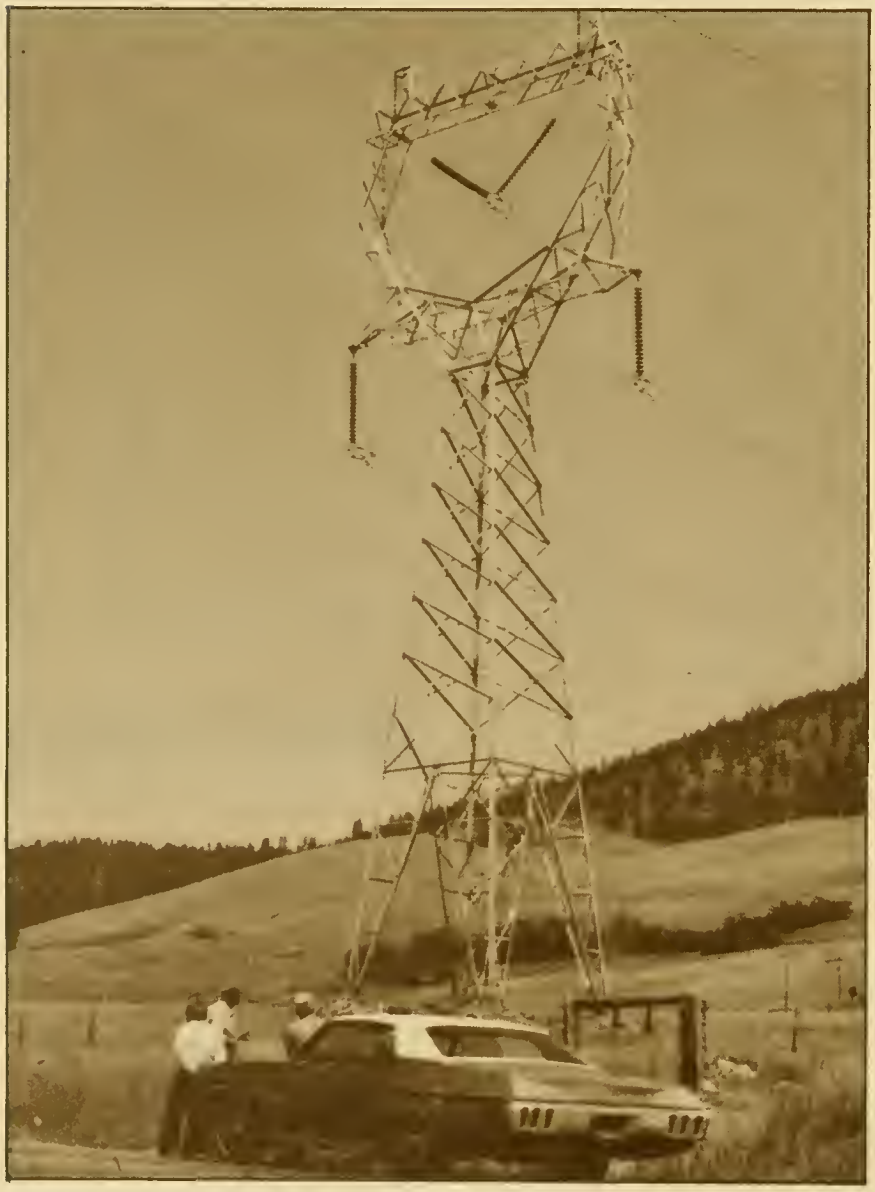
I am renewing my subscription in the sincere hope that your magazine will divert back to publishing articles that you, as fish and game people, know are factual and of interest to subscribers interested in outdoor Montana. Your last few issues have gone far afield.

In your July/August 1974 issue, the amount of space devoted to ridiculous untruths about 500 kv transmission lines was a waste of time and paper and was unbecoming a publication of this caliber. For example, the full-page picture of "The Bonneville Power Adminstration's 500 kv transmission line at Hot Springs" was not a 500 kv line, it was not at Hot Springs and I doubt seriously that it was a BPA line. Many of the statements in the articles were just as factual.

I do not believe it is the duty of the Department of Fish and Game, or even in its best interests, to try to brainwash the subscribers by using scare tactics and fairy tales to further its interests. I would suggest facts be presented so readers can make their own intelligent decisions.—*Del Blumhagen; Libby, Mont.*

• *Unfortunately, Mr. Blumhagen is only partly correct. In the editing shuffle, we inadvertently used the wrong print. But rest assured, Mr. Blumhagen, this print is indeed the 500kv Bonneville Power Administration line that extends from the Idaho border to Hot Springs.*

However, the article, "The New Horizon," could hardly be termed a "fairy tale," as you put it. Energy conversion and transmission will indeed have a severe and long-lasting impact on Montana. Because of this, we feel strongly that MO readers deserve information—other than that provided by the power companies—on an issue that could dictate their future way of life.—Ed.



The Bonneville Power Administration's 500kv transmission line near Hot Springs. photo by Leslie R. Haegen

wildlife shorts

Meadow voles build small runways or pathways in the grass. From these structures, feeding and exploratory activity take place.

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The only way in which some vole species can be identified is by comparing tooth structure.

****

The term "house mouse" denotes on old world mouse which occupies areas inhabited by humans. The difference between old world mice and new world mice is that old world mice possess a naked tail and new world mice have a hairy tail.

****

The common deer mouse population in eastern Montana has dropped considerably since 1970. This means a decrease in the primary food source for many predators.

****

Research shows that coyotes use rodents and rabbits as their primary food.

****

The northern pocket gopher is a solitary animal which only travels above ground during mating in February.

*****

Northern pocket gophers possess front paws tipped with long claws for digging. Their eyes are very small and they locate their food by smell.

****

The black-tailed prairie dog does not hibernate. It spends active periods underground during bad weather.

*****

To tell whether a badger is in its burrow, look for an earthen plug. The badger will fill the entrance of the hole when inside it.

MONTANA OUTDOORS INDEX

The following is a list of articles published in *Montana Outdoors* in 1974. Extra copies of most issues are available from *Montana Outdoors*, Department of Fish and Game; Helena, MT 59601. Price per copy is 50 cents.

CONTROVERSIAL VIEWS

the bull mountains might lose their bulls—bull elk and other wildlife in central Montana's Bull Mountains threatened by mining, timber cutting, subdivisions and agricultural practices. Jan./Feb. 1974

the subdividers are coming—no, the subdividers are here—in droves, (rural land development, part 1) Jan./Feb. 1974

was your steam gone when you got there?—this article might be able to tell you why. Jan./Feb. 1974

we're losing our steams—the consequences of stream alterations. Jan./Feb. 1974

the subdividers are still here—the development of rural land for homesites. (rural land development, part 2) May/June 1974

subdivisions—which side are you on?—a selection of letters—both pro and con. May/June 1974

can we keep it all together?—a proposal that the awesome Absaroka-Beartooth wildland be retained as one large, unified wilderness. July/Aug. 1974

don't fence me out!—the impact of motor driven vehicles on Montana's public lands. July/Aug. 1974

the new horizon—it won't be a very pleasant sight—thousands of miles of high voltage transmission lines. July/Aug. 1974

weep for the roche jaune—will burgeoning development make the majestic Yellowstone River a memory? July/Aug. 1974

the waters of the flathead—among the purest found anywhere, these waters are now threatened from many fronts. July/Aug. 1974

what do we do now?—the story of a controversial subdivision near Missoula. Sept./Oct. 1974

making molehills out of mountains—what will Canadian coal development mean to the Flathead area? Sept./Oct. 1974

FISH MANAGEMENT

aquatic invertebrates—why they are so vital to fish—and fishing. May/June 1974

electrofishing—a fish manager's tool. May/June 1974

what makes a stream good fishing?—two streams may look alike, but minor or major differences in the habitat could make one better fishing. July/Aug. 1974

the ling—ugly, but a treat on the table. Nov./Dec. 1974

GAME MANAGEMENT

a grazing system for wildlife—a livestock grazing system that benefits both wildlife and domestic stock. March/April 1974

montana hunting: what does the future hold?—Montana sportsmen best start looking into the future. Sept./Oct. 1974

how big game seasons are set—answers to your questions. Nov./Dec. 1974

GENERAL INTEREST

vote for your favorite fish—Montanans are asked if they want a state fish and, if so, which one. March/April 1974

enjoying wildflowers—a *Montana Outdoors* Recreation Guide. May/June 1974

growing your own worms—anglers can have a year-round, low-cost bait supply. May/June 1974

a state water plant?—a proposal May/June 1974

state fishing records—some categories are still without a record. May/June 1974

1974 legislative roundup—a recap of environmental legislation proposed during the 1974 legislative session. July/Aug. 1974

the hunter's moon—it casts a strange—and welcome—spell on sportsmen. Sept./Oct. 1974

big game scenes for framing—a selection of Montana's best wildlife photos. Sept./Oct. 1974

surviving the wilderness—what to do if you get lost and how to stay oriented in the first place. Sept./Oct. 1974

OUTDOOR RECREATION

ice fishing—the first *Montana Outdoors* Recreation Guide. Jan./Feb. 1974

when you're out on your snowmobile—some "do's" and "don'ts" for snowmobile operators. Jan./Feb. 1974

the bicycle—can it ever be the fisherman's best buddy? a *Montana Outdoors* Recreation Guide. March/April 1974

the way to the wilderness—a list of organized excursions into the wilderness. May/June 1974

the winter wilderness—how to get the most out of the snow-filled backcountry. a *Montana Outdoors* Recreation Guide. Nov./Dec. 1974

WILDLIFE

the game bird nobody hunts—more and more people are viewing the ptarmigan in its alpine habitat. Jan./Feb. 1974

meet the mountain sheep—a tale of bighorns, bunchgrass and broken terrain. March/April 1974

singing a song for unsung wildlife—we thought it was about time we said something for nongame wildlife. March/April 1974

the moose—what we know about Montana's largest member of the deer family. Sept./Oct. 1974

forest fires and wildlife—a comprehensive look at how forest fires affect wildlife. Nov./Dec. 1974

SPRINGBOARD

"The American consumer's interests are evidently NOT—either environmentally or economically—in western coal development. The coal industry's one real interest in the West is to obtain large blocks of coal. The *wisest* federal policy would be to *not* get involved in the coal business at all and so avoid encouraging monopolistic trends. Withholding federal coal from development would force the coal industry to negotiate for eastern reserves. The Mansfield Amendment protects more than western surface owners; it protects the eastern consumer."—*from the EPA Updated Low Sulfur Coal Deficit Study*

FOR DISCUSSION

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The 4 big ideas behind Ducks Unlimited

(And what they mean to sportsmen like you)

Every year more and more American sportsmen are getting behind Ducks Unlimited. And the better they understand the big ideas behind it, the more enthusiastic their support.

Idea #1

There are two reasons why the supply of wild ducks in North America has been so unstable in the past 30 years:

1. Increased drainage of wetlands.
2. Droughts or floods cut down nesting.

Idea #2

80% of all the ducks on American flyways are hatched each year in Canada. So if we want more wild ducks in the United States, we've got to improve and control nesting conditions in Canada.

Idea #3

Since by law duck stamp monies cannot be used outside the USA, a non-profit organization of volunteer American sportsmen like Ducks Unlimited must raise the monies needed to get the job done.

Idea #4

Because Ducks Unlimited's conservation plans and program do work, it receives enthusiastic support from Canadian governments and Canadian sportsmen as well.

So there are the ideas behind Ducks Unlimited . . . why it came into being in the first place. Here's what DU has accomplished to date:

1. Ducks Unlimited has raised and invested over $20 million to create, restore and control almost 2,000,000 acres of prime wetlands in Canada.

2. DU has built over 900 "duck factories"—all teeming with ducks. They include almost 9,000 miles of productive shoreline.

3. All the acreage has been provided to Ducks Unlimited at no cost by Canadian citizens and provincial and dominion governments.

Now DU has activated a new master plan that calls for turning an additional 4,500,000 acres into drought and flood proof duck factories in the next ten years.

To get the job done, thousands more American sportsmen must join Ducks Unlimited and give it the support it deserves. How about you?

Send your check for $10 or more (it's deductible) to Ducks Unlimited, Dept. T04, P.O. Box 66300, Chicago, Illinois 60666. Thank you. Thank you very much.

Before DU A dried up lake bed near Brooks, Alberta, Canada.

After DU Turned into 87 acres of prime waterfowl habitat.

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the ling

story and photos by Bill Miller

IT WAS A typical late January day in southwestern Montana—the thermometer hovering at 10° and an overcast sky threatening snow. Driving south on Interstate 15 out of Dillon, my car heater was working overtime to keep frost off the windows. A friend and I were headed for a day of ling fishing on Clark Canyon Reservoir.

I had a fleeting moment of doubt about the sanity of a fishing trip in this kind of weather. But that thought was quickly dismissed by thinking about my last delicious meal of ling.

The popularity of ice fishing in Montana has increased every winter and on Clark Canyon Reservoir, that popularity is owed primarily to the ling (or burbot). A few years ago, ice fishermen on the reservoir fished mostly for trout. Some anglers labeled ling "trash fish" and discarded them on the ice in winter or banks in summer. By 1973 this wasteful practice stopped—the word had spread that those ugly, eel-like fish were good sport and great eating.

When we reached the reservoir, the sky was clearing, allowing the sun to actually warm things up a bit. We joined other ling fishermen on the ice and spent an enjoyable day.

The ling, *Lota lota*, is the only fresh-water member of the codfish family, Gadidae. Marine relatives include the cod, pollack, hake and haddock, all popular food species. There's no mistaking the ling; no other Montana fish looks like an eel and has a single barbel or whisker under its chin.

Ling are native to the Missouri, Saskatchewan and Kootenai drainages in Montana. Reservoirs such as Fort Peck and Clark Canyon on the Missouri drainage have increased ling abundance and, in turn, fisherman success.

SPAWNING TIME: THE TIME TO CATCH LING

Ling spawn (deposit their eggs) in Montana during winter, usually in January and February. They congregate before spawning and then move to the actual spawning site, usually in rocky areas. No nests are built; the eggs simply settle to the bottom after fertilization.

In rivers, ling move upstream where deep pools behind dams or diversions attract spawning groups. In lakes and reservoirs, ling prefer rocky shoals or steep rocky inclines for spawning. Fishermen

continued

—ugly, yes, but good sport and great eating—

obviously find their task much easier when ling concentrate in large spawning groups.

FISHING GEAR

Almost any type of equipment can be adapted to winter ling fishing, including hand lines and tip-ups. When rigging a conventional rod and reel, choose a reel that won't freeze up. When some bait-casting and close-faced reels get wet, vital moving parts freeze. Rods with smaller line eyes also freeze up quickly. When ice fishing, use a little heavier line because ice abrasion can weaken the line.

Since bait is the usual fare in ling fishing, hooks, sinkers and an optional bobber compose the business end of the fishing rig. Weight of the sinker varies; I prefer a 1- or 1¼-ounce weight to take the bait down quickly in deep water where fishing is usually good in Clark Canyon. Ling have large mouths so a size 1 or 2 hook works well. Larger hooks are also easier for cold, numb fingers to bait and extract from the fish. Using a bobber is an individual choice, but your bobber can freeze in on a very cold day, preventing you from detecting a bite.

Classed as predators and scavengers in feeding habits, ling eat insects, worms, snails, crayfish, other fish and dead animal matter. Sucker meat, worms or animal entrails, such as pork or beef liver, provide good bait. Minnows work well in the main Missouri River, but check the fishing regulations to be sure this bait is legal in the area you choose to fish.

(For general details on ice fishing see the Recreation Guide in Jan./Feb. 1974 *Montana Outdoors*.)

CLEANING AND COOKING

Perhaps the hardest part of ling fishing is cleaning the critter. But, a knife and pliers are the only necessary equipment and the accompanying photo sequence will make the chore easier.

Ling are delicious a variety of ways, including deep fat fried, basted with butter, and broiled or baked. Here are three recipes guaranteed to increase your appreciation of ling:

Broiled Ling

Skin the fish and cut into 2 pieces. Place in boiling water and continue boiling 7 minutes. Remove to a broiling pan, coat the fish with butter, season well with salt and pepper. Broil until golden on top, 2-3 minutes. Garnish with a fresh parsley spring.—Kay Christenson; Dillon, Mont.

Fried Ling

Prepare the fish as for broiling. Blend the following mixture together, place it in a paper bag and shake fish in it:
½ c corn meal
½ c flour
1-2 t salt
¼-1/8 t pepper

Fry the coated fish in hot oil. The oil in the skillet should be deep enough to cover about half of the fish. In a large 12-inch skillet, this is at least two cups oil.—Connie Miller; Deer Lodge, Mont.

Barbecued Ling

4 ling
4 slices bacon
1 small onion, chopped
½ clove garlic

A good mess of ling and a trout caught during a one-day trip to Clark Canyon Reservoir.

—how to clean a ling—

Cut through the skin, all the way around the head.

Holding the ling firmly by the head, pull the skin off with pliers.

Remove head and entrails.

Cut into pieces for freezing or cooking.

1 bay leaf
¼ t sweet basil
1 t salt
dash cayenne pepper
1 t brown sugar
3 oz. tomato paste + ¾ c water *or*
1-#2 can tomatoes

Prepare ling as you would for broiling.

Fry bacon. Add onion and garlic. Saute, until lightly browned. Add remaining ingredients to bacon mixture and simmer, covered, for 10 minutes.

Place fish in greased shallow baking dish and pour sauce over fish. Bake one hour in 375 degree oven. Served over steamed rice. Serves 4.—Connie Miller; Deer Lodge, Mont.

Since ling are considered a nongame fish in Montana, no daily or possession limit exists. According to Montana Department of Fish and Game records, the record ling weighed 11 pounds, 12 ounces. It was taken by Jim Cooper in 1967 from Fort Peck Reservoir. Popular fishing areas for ling include the Yellowstone, Tongue, Big Horn and Missouri rivers, Fort Peck and Clark Canyon reservoirs and Lake Francis and Twin Lakes near Wisdom.

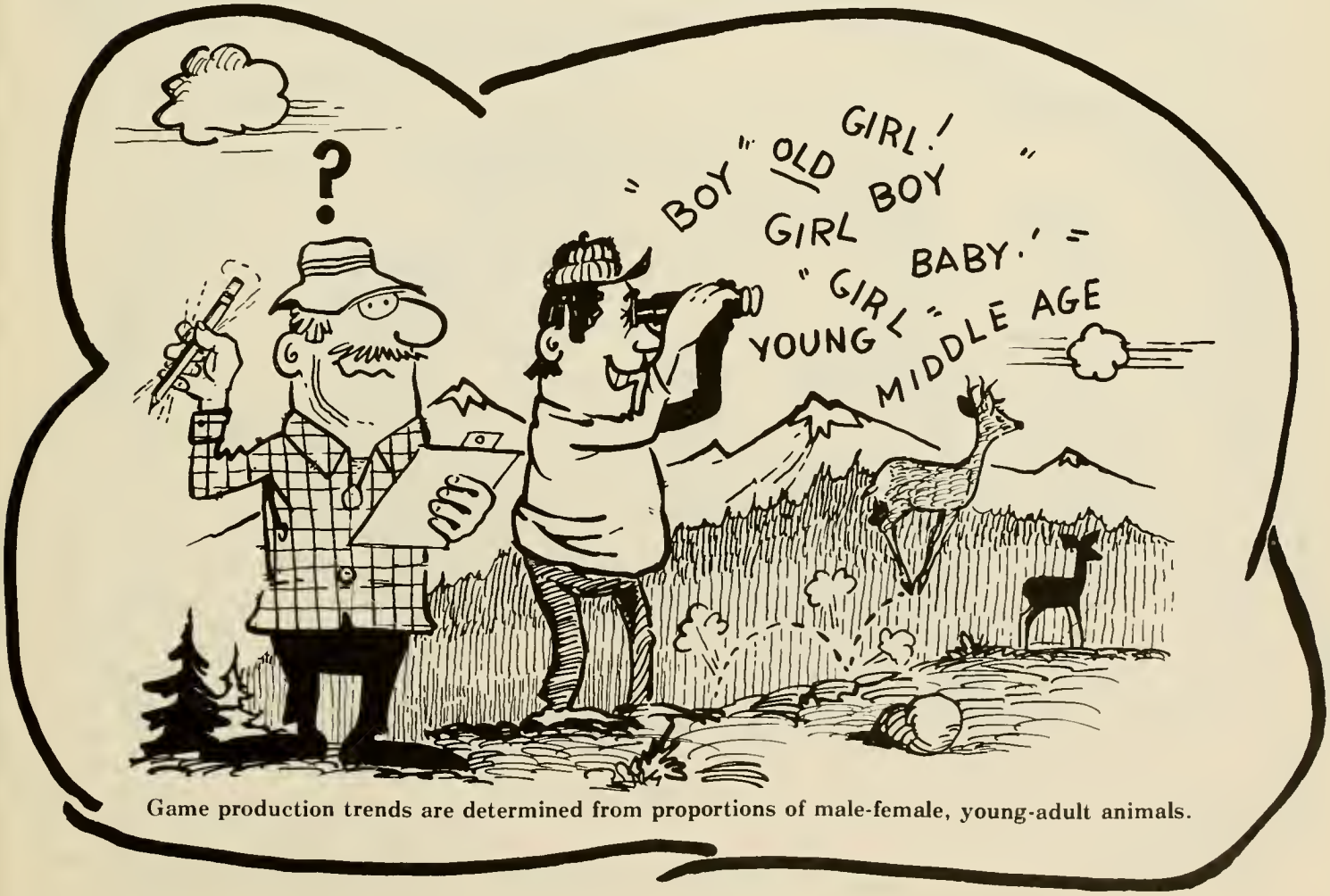
Put those notions about the ling's reputation as a "trash fish" out of your head. Take out your old fishing rod and head for one of the ling "hot spots." That ugly, eel-like critter is guaranteed to provide not only good winter sport, but good eating once you get it home to your table.

How Big Game Seasons Are Set

by Vern Craig

Important food plants on winter ranges are checked for condition, use and trend of the range.

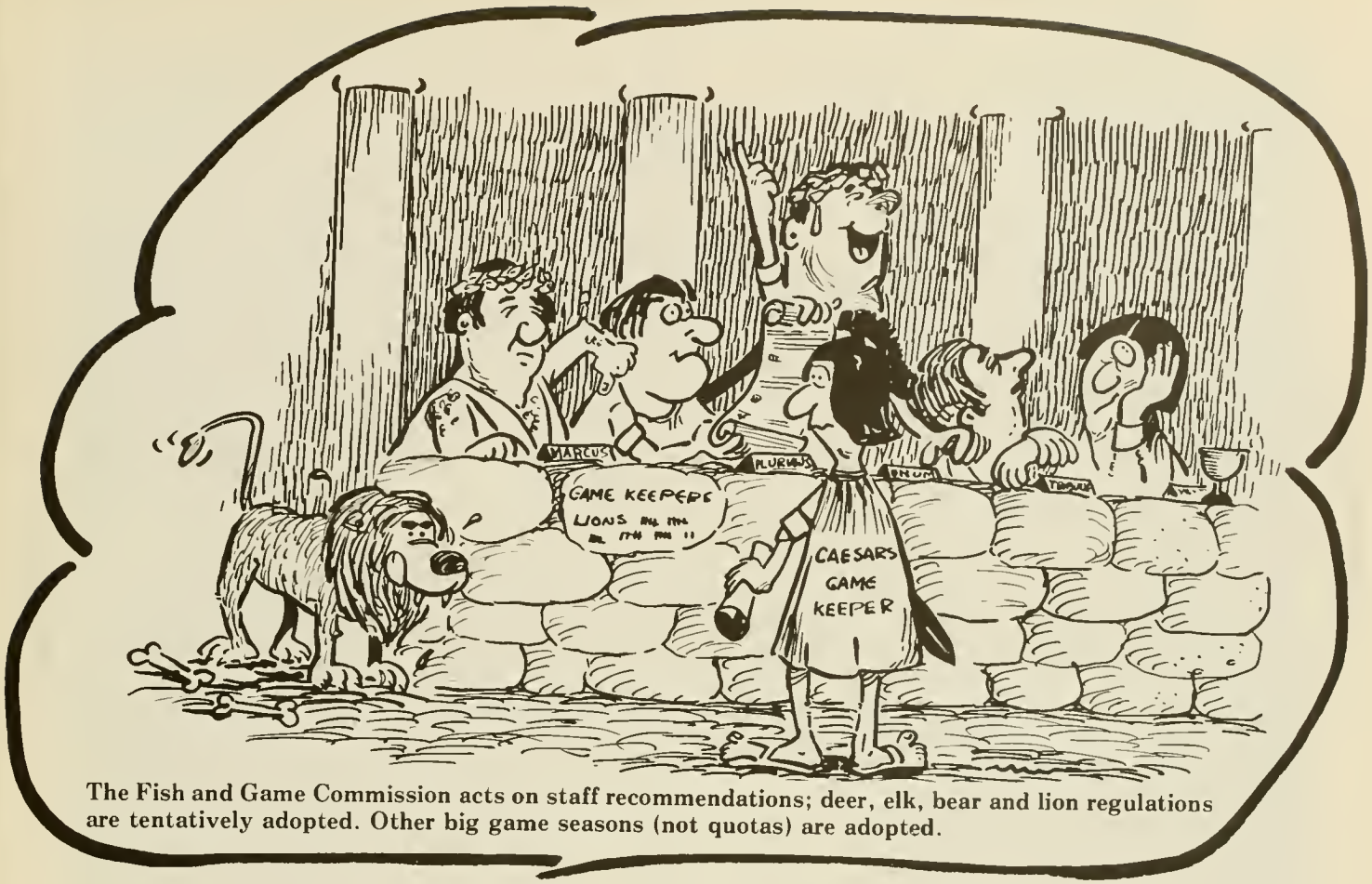
Trained technicians use latest methods to estimate game harvests.



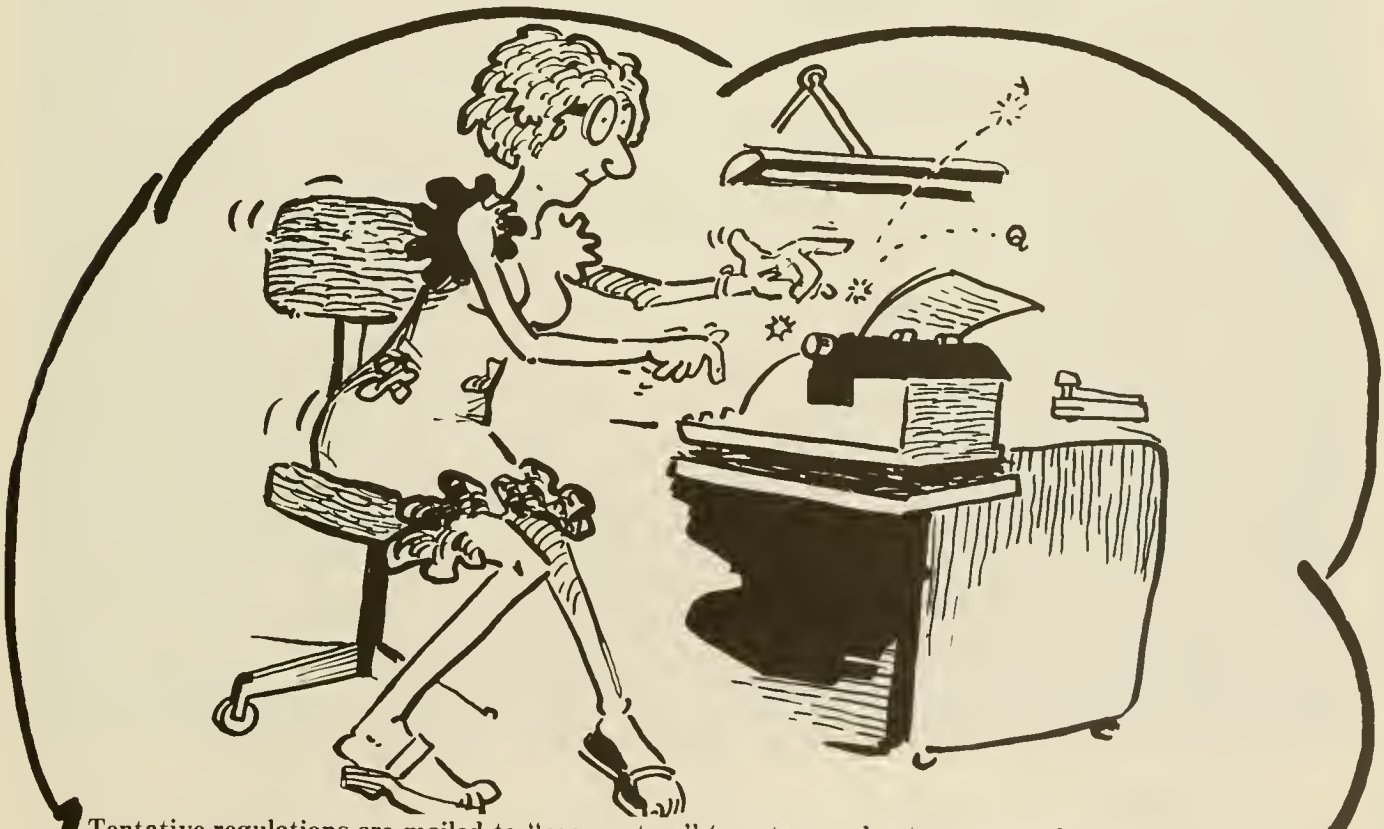
Game production trends are determined from proportions of male-female, young-adult animals.

Field information is reviewed on a regional basis and season recommendations forwarded to Helena.

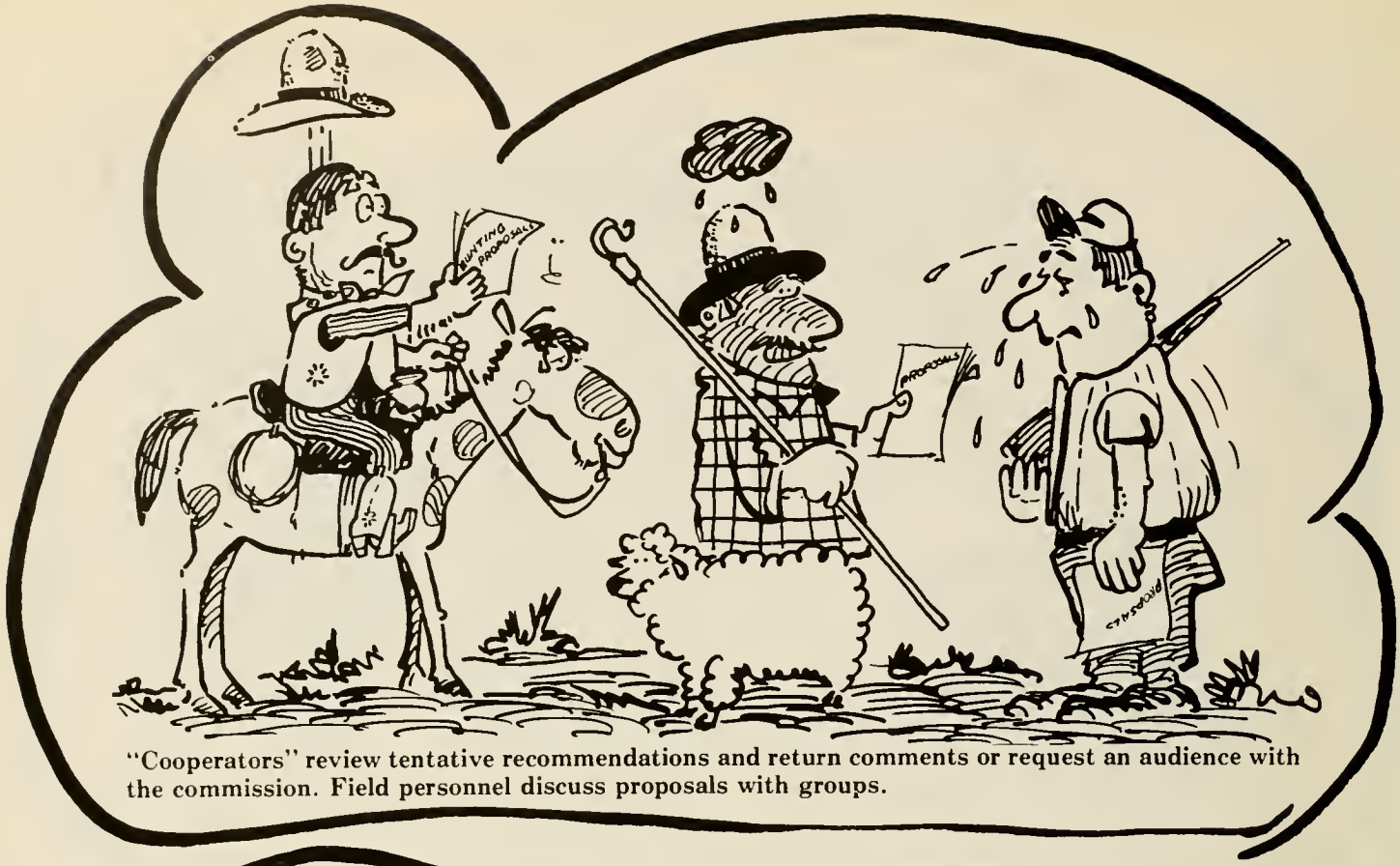
The Helena staff studies regional recommendations and coordinates them to fit the statewide picture.



The Fish and Game Commission acts on staff recommendations; deer, elk, bear and lion regulations are tentatively adopted. Other big game seasons (not quotas) are adopted.

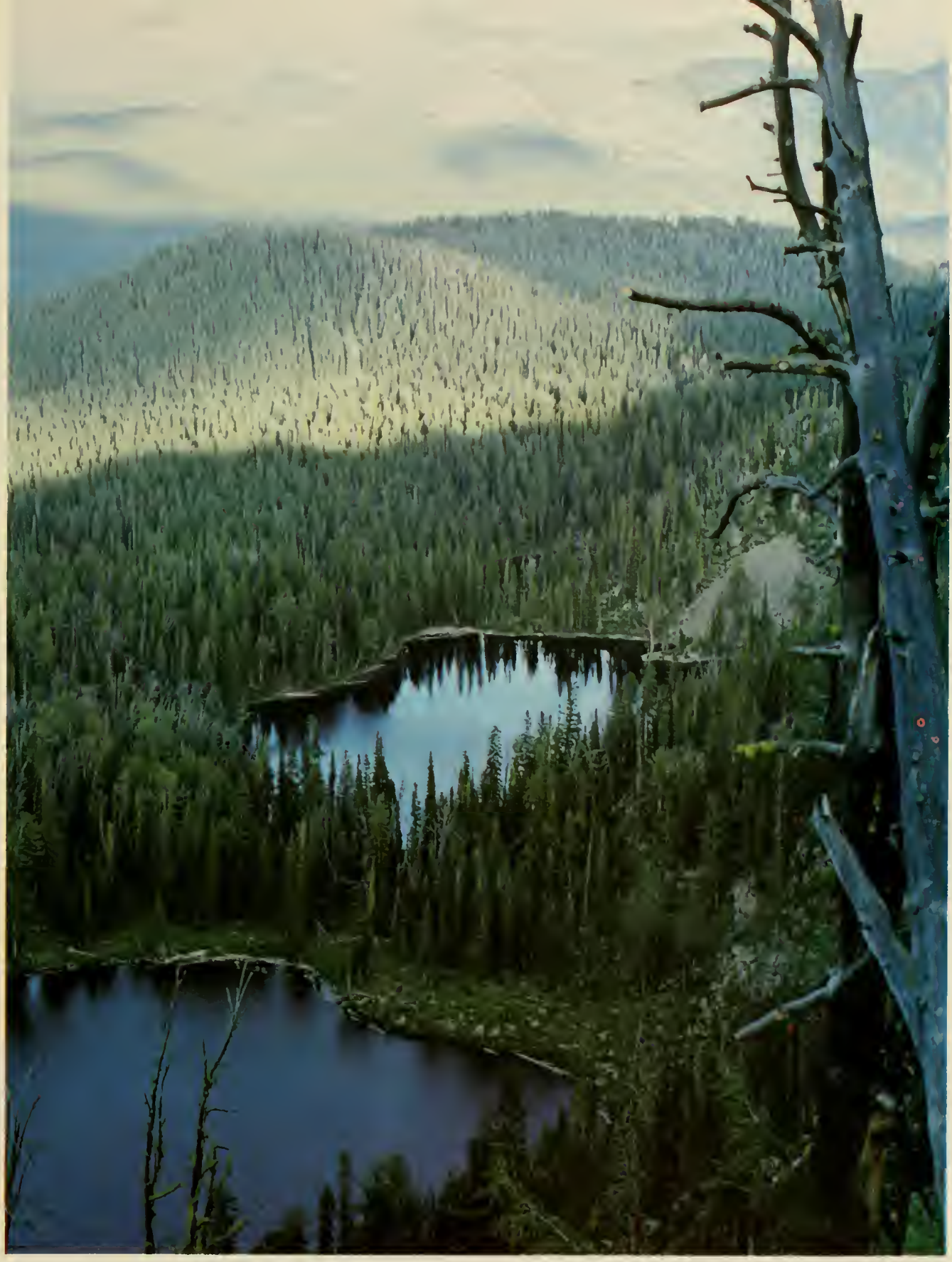


Tentative regulations are mailed to "cooperators" (sportsmen, landowner, stockmen groups; other agencies, interested individuals).



"Cooperators" review tentative recommendations and return comments or request an audience with the commission. Field personnel discuss proposals with groups.

Commission reviews comments of cooperators, hears delegations and adopts deer, elk, bear and lion hunting regulations.



Legend and Snow lakes in the headwaters of Moose Creek. Montana Wilderness Association photo

Moose Creek Morality

please turn the page for guest editorial

editorial

moose creek morality

guest editorial by Doris Milner, president, the Montana Wilderness Association

What is the Moose Creek controversy? Essentially, it's an unresolved moral question of what is the best enduring purpose for 15,000 acres of undeveloped public forest, at the northern headwaters of the East Fork of the Bitterroot River.

The Montana Wilderness Association (MWA) and other state and national conservation groups feel the Moose Creek area best serves the people by (1) yielding a controlled flow of clear, cold water for fishing streams and agriculture (2) providing undisturbed summer habitat for several hundred head of elk, mountain goats, moose and other wildlife and (3) retaining a beautiful forest and alpine landscape for many kinds of outdoor recreation.

The MWA believes that is enough to ask of this fragile subalpine area.

On the other side, the Forest Service contends it can build roads and clearcut timber in this drainage and still keep the other values "within acceptable limits" of environmental quality.

I asked one of our members—who unfortunately must remain unnamed—to look at Moose Creek and describe it for me. I have been in Moose Creek and have enjoyed its beauty, but he sees an area in a way more related to the biological function of the land and its resources.

*****

"Doris," he begins, "I'm heading for Bare Hill where there should be a clear view of Moose Creek and surroundings. It's a cone of rock rubble at 8,749 feet, on the main ridge between the headwaters of Moose Creek and Rock Creek in the Sapphire Mountains some 20 miles east of Darby.

"On top now, my pack slides to the ground, the wind goes through my shirt and ices me along my sides and down my back—exhilarating on this warm August forenoon.

"In the full sweep which unwinds around this point, an unmarred, unspoiled and untroubled mountainous profile of rock-strewn ridges, grassy parks, meadows and alpine lakes stands interwoven in a blanket of trees.

"You can see into Ross Fork and the South Fork of Rock Creek and down the long trough of Moose Creek to where it necks through cliff rock and steep talus slopes. To the east is the rumpled and bouldery topography of Cuba Creek with a large elk meadow at its forks. Higher and beyond are the meadows of Frog Pond Basin. Below, in a cirque, a small emerald lake sits, beautiful and unnamed. Within a four-mile radius are a dozen alpine lakes, some with good fishing, some just for viewing. Backdropped in the west, the huge land mass of the West Bitterroots rises, its lingering snowbanks white in the forenoon sun.

"This is the hub of a seemingly untouched land rising to and cresting the Sapphires from Skalkaho Pass to Senate Mountain and the Anaconda-Pintlar Wilderness.

"This is summer range for hundreds of Bitterroot elk. The calves are nursed and grow here, and learn the fleet art of living in the wild.

"On an early summer morning you could—from some vantage points—see elk grazing in the meadows and hear those alert cows bark to their calves, and watch the games of tag which are training for survival in the months and years ahead.

"To the east, 45 square miles of the Sleeping Child Burn lies on the slopes of the Sapphires and parallels this high country of Moose Creek. I can't help thinking that summering elk displaced from those burned out drainages have taken temporary residence here in the basins of Moose Creek and Rock Creek.

"But it's not just elk country up here—I've

been trying to unravel the goat track and decide how many nannies and kids passed this way recently. Or, was it a big billy or just a middle-sized billy that left its hoof prints in the dust of this little game trail I've been following?

"There is moose sign too, especially around the potholes and boggy meadows. Yesterday I was glad to have no contest of right-of-way with the big bull which left its track fresh in the trail ahead of me.

"That powdery white scat was probably deposited by a lynx. The cats have a digestive system powerful enough to dissolve bone. That amount of acid in my stomach could only be considered severe indigestion!

"In some years, the bears will come up here in late summer to get seeds from the cones of whitebark pine, but this year the whitebark is without abundant seed. But it was a good berry year.

"I would be delighted, but not surprised, to see a wolverine track. A friend of mine has seen a couple of them a few miles southeast. They are few and even a track is noteworthy.

"That green blanket of trees makes its own description in the patterns, shapes, textures and colors of what is discernible before it loses identity in the hazy August distance.

"On the cool north and east faces of these high ridges, the alpine larch grows, slender branches reaching out with short and tasseled needles of the gentlest green, turned gold by October.

"On the drier sun-washed ridges and scattered downslope for a thousand feet grow the whitebark pines, often forked and spreading like old apple trees, olive needles five to the bundle and clustered toward the ends of the branches. Occasionally goats which decide to winter at high elevations will browse the young saplings.

"The slender dark green spires are subalpine fir which spread throughout these drainages from high ridges to canyon bottoms. Their susceptibility to insects and disease is about balanced by an ability to grow through even a small opening in the forest's canopy.

"The soft pale green across Cuba Creek and to the south is a thousand acre stand of young lodgepole which seeded in after a fire in the late 1800s.

"Then there are the spruce trees, tall, with crowns the shape of narrow Gothic arches. They rise somewhat above the other trees which roll and dip across this harsh and fragile landscape. The pattern of spruce growing in Moose and Rock creeks is nearly identical to the pattern of water which surfaces and collects from bogs and seeps, and gathers to supply summer flow for the main stream channels. These are shaded, cold and well-filtered waters which feed the cool trout streams some miles distant.

"Healthy crowns exist on most of the spruce that I can glass from here. I see a red crown here and there, but they are subalpine fir which have continually grown up and died back since before the forest can remember.

"Perhaps high elevation spruce in their relationship to water, wildlife and landscape already serve an adequate purpose to mankind.

"Standing here on Bare Hill, with that map of the intended sale which you gave me, it is not difficult to spot the location of all nine clearcut blocks.

"Doris, the sun has run far to the west and shadows reach out long. I had best leave now and not look back to where progress has swallowed it up."

*****

Moose Creek is not a new conservation fight. It has continued, off and on, for the past seven or eight years. Expensive road costs and low lumber prices kept it dormant for awhile. Then the FS planning process for unroaded areas created a temporary armistice.

This past spring, however, the FS threw down the gauntlet by preparing and advertising for sale six million board feet of clearcut timber in Moose Creek.

The MWA, Montana Wildlife Federation, The Wilderness Society, Trout Unlimited, Western Montana Fish and Game Association, Sierra Club and Friends of the Earth have collectively appealed the sale. The appeal is now in the process of review within the FS.

We doubt it will end there. It looks as if it's shaping up for a hassle in court if some neutral position cannot be found.